AN INTRODUCTION TO THE STUDY OF LANDSCAPE DESIGN

HENRY V. HUBBARD
THEODORA KIMBALL

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H. V. Hubbard

FRONTISPIECE — IN THE HIGH SIERRAS, CALIFORNIA

AN INTRODUCTION TO THE STUDY OF LANDSCAPE DESIGN

HENRY VINCENT HUBBARD
PROFESSOR OF LANDSCAPE ARCHITECTURE
HARVARD UNIVERSITY
THEODORA KIMBALL

REVISED EDITION



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TO
OUR FELLOW-STUDENTS
OF LANDSCAPE ARCHITECTURE
AT HARVARD UNIVERSITY

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PREFACE

We mean this book to present a general conception of landscape design which may enable a designer better to determine for himself the relations of the objects and ideas with which he is dealing, and better to prepare and use in a decisive way, in the individual problems of his profession, the natural aptitudes and acquired knowledge which are the tools of his trade. The book may also serve as a general introduction to the subject for those whose interest in it is purely that of appreciation and enjoyment of landscape designs and of natural landscapes.

The rapid growth of landscape architecture as an independent profession has been very recent. Nearly all the trained men in the field are giving their energies to active practice rather than to theorizing or to writing. It is natural, therefore, that the bulk of the detailed printed information on construction and planting which the landscape architect uses should have originated in the older fields of architecture and engineering and horticulture, that the discussions of general esthetics should have little specific reference to the problems of the landscape architect, and that, while there have been many books on special problems and special aspects of the field, there should have appeared up to this time no book, treating generally of landscape design, adequate to the modern development of the subject and of the profession.

This book is not a compendium of useful information as to the practicalities of landscape construction, though such a book is much needed; nor is it primarily a book of pictures of completed work to which the designer may go to see how problems similar to his own have been met before. It is emphatically not a book of rules which are supposed automatically to produce good design if religiously followed; there are no such rules, and no esthetic theory is final. We make no attempt at any original contribution to the subject of general

esthetics; we merely take an esthetic theory which seems — to us at least — consistent and capable of general application, and use it as the basis of an organization of the subject matter of the field of landscape design.

In the light of this theory, we discuss the various materials of which landscape compositions are made, and then, to make this discussion more definite and directly useful, we treat at some length certain examples of the problems of the modern landscape designer; considering briefly also, in the appendix, how the landscape architect may handle some parts of his professional practice, and giving a series of plans of actually constructed work.

We have chosen the illustrations primarily to show points in the discussion which cannot so well be expressed in words; also, as far as we were able, consistently with their other uses, we have tried to have the pictures in themselves good examples of composition in various modes. We have been content to forego, in many instances, the use of pictures of subjects already well covered in other books, for instance gates, garden furniture, steps, fountains and so on.

Since we intend this book to be useful also as a textbook, we have made the subject-index unusually full.

We include a list of references to the more important literature of landscape architecture. Taken together with the footnotes, this gives the reader an opportunity further to pursue aspects of the subject not treated at length in this book, or to find a statement of them in the clearest or most authoritative form.

We are well aware that no designer was ever made by the study of theory alone, and that most of the essential fire of emotion in appreciation and design is forever untransmutable into written words, but there still should be a place for a theoretical conception of the subject, even in the minds of the most inspired designers, and we are writing this book in the hope of adding something to the clarity of this conception.

H. V. H.
T. K.

Cambridge, Massachusetts
June, 1917.

CONTENTS

CHAPTER I

PAGES

INTRODUCTION 1–5

Definition of landscape architecture, 1 — Its province, 1 — Its development as a separate profession, 2 — Its requirements of the practitioner, 3 — His preparation, 4 — His opportunities and rewards, 5.

CHAPTER II

THEORY OF LANDSCAPE DESIGN 6–23

Landscape design defined, 6 — Esthetic and economic aspects, 6 — Psychological basis of esthetic theory of design, 7 — Sensation, perception, intellection, 7 — Pleasure, 8 — Sources of pleasure in sensation, 8 — In perception and imagination, 9 — In intellection, 10 — Experience, emotion, and association, 12 — Esthetic analysis in design, 16 — Unity, 16 — Logical, 17 — Ethical, 17 — Economic, 18 — Esthetic, 19 — Esthetic expression and impression, 19 — Definition of beauty, 19 — Types, 21 — Ideals, 21 — Taste and style, 22 — Landscape character, 22 — Landscape effect, 22.

CHAPTER III

TASTE, IDEALS, STYLE, AND CHARACTER IN LANDSCAPE DESIGN . . 24–31

Taste, individual and community, 24 — Development of taste, 25 — "Schools" and tradition, 25 — Teaching and taste, 26 — Criticism, 26 — Self-criticism in design, 27 — Choice of ideals, 27 — Perfection, 28 — Imagination and genius, 28 — Style: Individual style, 28 — Historic styles, 29 — Humanized and naturalistic styles, 30 — Interpretation of landscape character, 31.

CHAPTER IV

STYLES OF LANDSCAPE DESIGN 32–61

Origin and names of historic styles, 32 — Categories of styles, 33 — Examples of historic styles of landscape design, 35 — The Moorish style in Spain, 35 — The Moghul style in India, 36 — The styles of

PAGES

the Italian Renaissance and Baroque villas, 39 — The style of Le Nôtre, 42 — The Romantic landscape style, 45 — The English formal style of the Tudors, 47 — The English cottage style, 49 — The New England colonial style, 50 — The modern German formal style, 51 — The Japanese styles, 54 — The modern American landscape style, 57 — Study of styles, 59 — Choice of style, 60.

CHAPTER V

LANDSCAPE CHARACTERS 62–75

The physical origin of landscape characters, 62 — Characters as parallel to styles, 63 — Examples of landscape characters, 64 — The prairie, 64 — The barren or tundra, 65 — Sand dunes, 66 — The Sequoia grove, 66 — The Sierra mountain meadow, 67 — The bushy pasture, 68 — English pastoral landscape, 69 — Design in landscape characters, 70 — Landscape characters in relation to economic use and maintenance, 72 — Value and preservation of characteristic scenery, 74 — Man's need of free landscape, 75.

CHAPTER VI

LANDSCAPE EFFECTS 76–87

Taste in landscape effects, 76 — Variety of landscape effects, 77 — Literary discussions of landscape effects, 77 — The "beautiful" and the "picturesque," 77 — Their fundamental difference, 77 — Their application in design, 78 — Examples of other effects, 79 — Sublimity, 79 — Desolation, 81 — Melancholy, 81 — Gayety, 82 — Mystery, 82 — Effects from transitory conditions, 83 — Harmony and contrast in effects, 83 — Effects in landscape characters, 84 — Effects in styles, 85 — Design in effects, 86.

CHAPTER VII

LANDSCAPE COMPOSITION 88–129

Composition in landscape and in painting, 88 — Order in composition, objective and subjective, 89 — Segregation of the composition, 90 — Unity and attention, 90 — Attention and training, 91 — Emphasis, contrast, climax, dominance, 91 — Landscape composition within the visual angle, 92 — Unity of larger landscape compositions, 92 — The forms of order in composition, 93 — Repetition, 94 — Harmony, monotony, and variety, 94 — Sequence, 94 — Sequence of continuation or repetition, 94 — Rhythm, 95 — Progression, 96 — Balance, 96 — Symmetrical, 97 — Occult, 97 — Intensification of emotion from

PAGES

repetition, sequence, and balance, 97 — Characteristics of objects in landscape composition, 98 — Shape, 98 — Individuality through shape in landscape composition, 99 — Value of shapes and their arrangement in composition, 100 — Size, scale, and distance, 101 — Absolute and relative scale, 101 — Indication of scale in landscape composition, 101 — Effects of perspective, 102 — Texture, 103 — Scale relation of texture to size and shape, 103 — Color, 104 — Color and light, 105 — Hue, intensity, and value in color composition, 106 — Emotional effect of colors, 107 — Color harmony, 107 — Color in landscape composition, 110 — Light and shade, 111 — Light and shade unity in landscape composition, 111 — Variability of light and shade, 112 — Atmosphere and atmospheric perspective, 113 — As a consideration in landscape composition, 115 — Illusions in composition, 116 — Of material, 118 — Of shape, 119 — Of size, 120 — Of character, 121 — Associational illusions, 121 — Landscape compositions, 122 — Typical kinds of pictorial compositions, 123 — The vista as a typical example, 124 — Pictorial enframement, foregrounds, backgrounds, and planes of distance, 126 — Objects in landscape composition according to their design value, 128 — Temporary elements, 129.

CHAPTER VIII

NATURAL FORMS OF GROUND, ROCK, AND WATER AS ELEMENTS IN DESIGN 130–150

The value in design of a knowledge of natural forms, 130 — Hills and mountains: typical forms, 131 — Hill and mountain forms in landscape composition, 132 — Modification of effect of hill by treatment of local details, 133 — Valleys: typical forms, 134 — Choice of viewpoint for completeness of effect of valley, 135 — Plains: typical forms and effects, 136 — Bodies of water: their effects, 136 — Lakes, 137 — Islands, 138 — Shores and beaches, 138 — Streams and stream banks, 140 — Waterfalls, 142 — Rocks in naturalistic design, 143 — Bowlders, 144 — Ledges, 145 — Color and texture of rocks, 146 — Rock planting, 147 — Minor modeling of ground surface, 147 — Banks, 148.

CHAPTER IX

PLANTING DESIGN 151–188

Plants as material in landscape design, 151 — The time element in planting design, 152 — Relation of planting design and maintenance, 153 — Plant characteristics in landscape design, 153 — Plant forms, 153 — Classes of tree forms and their uses in design, 154 — Form the expression of mode of growth, 155 — Winter tree form, 156 — Form in topiary work, 156 — Plant texture, 157 — Plant color, 159 — Effect of character of leaves on foliage color, 159 — Range of foliage color, 159

PAGES

— Restricted use of other colors than green, 159 — Effects of foliage color, 160 — Contrast of color in differentiation of units in design, 160 — Foliage color and aërial perspective, 161 — Use of "colored foliage," 161 — Autumn foliage, 161 — Winter color, bark, and fruit, 162 — Color of flower, 162 — Practical difficulties of design in flower color, 162 — Circumstances harmonizing flower colors, 163 — Mass relation in flower color, 163 — Plant character, 164 — Species and character, 164 — Individual plant character, 165 — Character and environment, 165 — Relation of plant character and landscape character, 165 — "Expression" and character, 166 — Association and symbolism, 166 — Plantations, 167 — Inclosing plantations, 167 — Outline, modeling, and treatment of informal inclosing plantations, 168 — Hedges, 170 — Low hedges and edgings, 171 — Specimen trees and shrubs, 171 — Tree and shrub groups, 173 — Composition of groups, 174 — Shrub beds, 175 — Herbaceous beds and borders, 176 — Flower beds as parts of a garden inclosed, 177 — Arrangement of plants in relation to form of bed and form of plants, 177 — Arrangement of plants in relation to time of bloom, 178 — Arrangement of plants in relation to color, 179 — Grouping of plants according to character, 179 — Planting as surface decoration, 179 — Carpet bedding and parterres, 180 — Ground cover, 182 — Turf, 182 — Planting in relation to topography, 183 — Water-side planting, 185 — Planting in relation to architectural structures, 186 — Planting as enframement, 186 — Planting as transition between ground and structure, 187 — Planting as decoration of structures, 188.

CHAPTER X

DESIGN OF STRUCTURES IN RELATION TO LANDSCAPE 189–230

Buildings in relation to landscape, 189 — Buildings subordinate to natural character, 189 — Buildings dominating landscape, 190 — Form relations of buildings and landscape surroundings, 192 — Building groups, 194 — Texture relations, 194 — Color relations, 195 — Shelters and pavilions, 196 — Terraces, 198 — Parapets, 199 — Retaining walls, 200 — Terrace banks, 200 — Steps, 201 — In formal design, 201 — In naturalistic design, 203 — Walls and fences, 204 — Walls: materials and decoration, 205 — Fences, lattices, and grilles, 207 — Gateways and gates, 209 — Statuary, 210 — Its value among decorative objects in design, 211 — Its setting in landscape composition, 212 — Architectural and sculptural water features, 213 — Grottoes and wall fountains, 213 — Cascades, 214 — Water-ramps, 214 — Free-standing fountains, 215 — Pools and basins, 215 — Bridges, 216 — Their forms and materials, 217 — Roads and paths, 218 — Roads in naturalistic landscape, 219 — Form of roads, 220 — Road intersections, 221 — Views of and from roads, 222 — Planting and roads, 223 —

PAGES

Paths in naturalistic design, 224 — Form of paths, 224 — Roads in formal design, 225 — Paths in formal design, 226 — Materials of roads and paths, 227.

CHAPTER XI

TYPES OF LANDSCAPE DESIGNS 231–323

Landscape designs according to typical uses, 231.

PART I. THE GARDEN, 233–246 — Definition and use of the word "garden," 233 — Esthetic characteristics of a garden, 234 — Inclosure, 234 — Plants in the garden, 235 — Unity of effect of whole garden, 236 — A garden recognizably a work of design, 236 — Formal and non-formal arrangements, 237 — Ways of giving a garden distinctiveness, 237 — Choice of style, 239 — Composition of the garden, 239 — Its compositional elements, 239 — Inclosure materials, 240 — Retaining walls and banks, 240 — High boundaries: their composition and decoration, 241 — The house as part of the garden boundary, 242 — Garden "floor" materials, 242 — Typical compositional arrangements of the garden floor, 243 — Objects marking points of interest in the garden composition, 244 — Suitability of different objects to this purpose, 245.

PART II. THE ESTATE, 247–274 — The estate as expressing the owner's desires, 247 — Physical elements of the estate, 249 — The house, 250 — Effect of interior arrangements on house form, 251 — House form as affected by choice of style, 253 — Location and orientation of house, 253 — The house terrace, 257 — The forecourt, 258 — The garden as a unit of the estate, 259 — Pleasure buildings, 261 — House service areas, 263 — Estate service buildings and areas, 263 — The greenhouse, 264 — Reserve and vegetable gardens, 265 — Tennis courts and areas for other recreations, 266 — The open lawn, 267 — Tree-shaded areas, 268 — Natural character units, 268 — Access, 269 — Approach roads, 269 — Paths, 271 — The design of the whole estate, 272 — Choice of site for an estate, 273 — Apportionment of estate area into the units required, 274.

PART III. LAND SUBDIVISION FOR RESIDENTIAL PURPOSES, 275–294 — Land subdivision as a business venture, 275 — Items of expense to the developer, 275 — Salable assets produced by development, 276 — Room, 276 — Proximity to town, 277 — Convenience, 277 — Social desirability, 277 — Amenity, 277 — Beauty, 277 — "Low-cost" and "high-cost" developments, 278 — Professional advice in land subdivision, 280 — Procedure in design, 280 — Choice of type of development in relation to development of city, 280 — The street system: its relation to the city plan, 282 — Alleys, 282 — Characteristic effects of street systems, 283 — Streets in relation to topography, 283 — Subsurface utilities, 284 — Street widths, 284 — Roadways and planting

PAGES

strips, 285 — Sidewalks, 285 — Lots: sizes, 286 — Width and depth, 286 — Shape, 287 — Orientation, 288 — Reserved areas, 289 — Restrictions, 291 — Zoning and Municipal Control of Land Subdivision, 293.

PART IV. LANDSCAPE PARKS AND RESERVATIONS, 295–323 — Man's need of recreation, 295 — Classification of outdoor recreation areas, 296 — Their relation to the city plan: park systems, 297 — The large landscape park, 298 — Site and available landscape character units, 299 — Extent and seclusion, 300 — Park use and landscape units, 301 — Landscape characters best fitted to park use, 301 — Pastoral landscape, 301 — Wooded landscape, 302 — Rocks and ledges, 303 — Brooks and ponds, 303 — Uses properly served by a landscape park, 305 — Access and entrances, 308 — Circulation, 309 — Roads, 309 — Bridle paths, 311 — Footpaths, 311 — Inter-relation of roads and paths, 313 — Buildings properly serving park uses, 314 — Buildings in relation to the park landscape, 316 — Minor structures: park furniture, 316 — Park boundaries and gates, 318 — Landscape reservations: Municipal and Metropolitan, 318 — Combination with other uses, 320 — State and National parks and reservations, 321 — National planning, 323.

APPENDIX

PART I

NOTES ON THE PROFESSIONAL PRACTICE OF LANDSCAPE ARCHITECTURE IN AMERICA 325–337

Professional conduct, 325 — Professional charges, 326 — Professional reputation, 328 — Advertising and publicity, 329 — Professional announcements, 331 — Public exhibitions, 331 — Competitions, 332 — Landscape architect, client, and contractor, 332 — Coöperation of landscape architect with other practitioners, 333 — Coöperation in city planning, 334 — Organization and equipment of a landscape architect's office, 334 — Clerical force, 334 — Technical office and field force, 335 — Office reference material, 336.

PART II

NOTES ON PROCEDURE IN DESIGN 338–353

The client, 338 — Topographic data, 339 — Design, 340 — Representation of design, 342 — Models, 342 — Pictures and plans, 343 — Written statements, 343 — Verbal directions and explanations, 345 — Series of drawings for a landscape job, 345 — An example of representation of design: presentation of landscape plans, 346 — Superin-

PAGES

tendence: of construction, 351 — Of maintenance, 353 — Note on drawings to accompany Appendix, Part II, 355 — List of plants to accompany planting plan, 357.

SELECTED LIST OF REFERENCES ON LANDSCAPE ARCHITECTURE 361–381

Bibliography, 361 — Periodicals, 362 — General, 363 — History and historic styles, 365 — Theory of landscape design and appreciation, 368 — Landscape composition, 370 — Natural forms of ground, rock, and water, 371 — Vegetation: Planting design, 371 — Structures in relation to landscape, 374 — Types of landscape designs, 376: Estates and gardens, 377 — Various semi-public types, 382 — Parks and playgrounds, 384 — Land subdivisions, 386 — City planning, regional planning, rural planning, 388 — Professional practice, 392 — Construction and maintenance, 392.

INDEX 383–406

LIST OF ILLUSTRATIONS

DRAWINGS

				PAGE
I.	Cypress Alley, Villa Gamberaia	*A. B. LeBoutillier*	opposite	26
II.	Gravetye Manor	*Hubert G. Ripley*	"	30
III.	Garden Pool, The Generaliffe	*Benjamin Y. Morrison*	"	36
IV.	Terrace Steps, Villa Garzoni (Collodi)	*Henry P. White*	"	40
V.	Fountain on Main Terrace, Versailles	*Hubert G. Ripley*	"	44
VI.	Steps to the Terrace, St. Catherine's Court, Somerset	*Henry P. White*	"	48
VII.	Cottage on the Thames	*A. B. LeBoutillier*	"	50
VIII.	Garten am Müggelsee	*Redrawn by Henry P. White*	"	54
IX.	The Chateau from the end of the Long Canal, Versailles	*Henry P. White*	"	78
X.	Grand Trianon, Versailles	*Henry P. White*	"	80
XI.	The Music Pavilion, Petit Trianon, Versailles	*Henry P. White*	"	82
XII.	The Hameau, Petit Trianon, Versailles	*Henry P. White*	"	84
XIII.	Gateway to Orange Garden, Villa Palmieri	*Henry P. White*	"	100
XIV.	The Inner Court, Villa Falconieri	*Hubert G. Ripley*	"	112
XV.	St. Peter's, Rome, from outside the City	*Henry P. White*	"	122
XVI.	Diagram: Relation of Enframement and Vista Point	*H. V. Hubbard*		126
XVII.	Diagram: Shores subject to Wave-action	*H. V. Hubbard*		139
XVIII.	Plan: Wild Garden, Newport, R. I.	*H. V. Hubbard*	opposite	146
XIX.	Diagram: Typical Sections in Informal Road Grading	*H. V. Hubbard*		149
XX.	A Corner of the Garden, Bradfield, Devon	*Henry P. White*	opposite	158
XXI.	Diagram: Two Different Types of Herbaceous Planting	*H. V. Hubbard*	"	176
XXII.	Diagram: Relation of Plant Form to Ground Form	*H. V. Hubbard*		184
XXIII.	Abandoned Farmhouse	*Hubert G. Ripley*	opposite	190
XXIV.	English Hillside Farm Buildings	*Hubert G. Ripley*	"	192
XXV.	The Temple of Love, Versailles	*A. B. LeBoutillier*	"	196
XXVI.	Thatched Shelter	*Henry P. White*	"	198
XXVII.	Diagram: Some Typical Forms of Steps	*H. V. Hubbard*	"	202
XXVIII.	Diagram: Typical Plans of Curving Roads	*H. V. Hubbard*		221

				PAGE
XXIX.	Diagram: Some Relations of House and Surroundings	*H. V. Hubbard* .	opposite	254
XXX.	Plan: Formal Relation of House and Surroundings	*H. V. Hubbard* .	"	260
XXXI.	Plan: Relation of House to Views on all Four Sides	*H. V. Hubbard* .	"	268
XXXII.	Plan: Relation of House and Surroundings to Irregular Site	*H. V. Hubbard* .	"	274
XXXIII.	Plan: Land Subdivision Scheme for a Hillside Tract	*H. V. Hubbard* .	"	280
XXXIV.	Plan: Development of Several Lots on Hillside Tract	*Elbert Peets* . .	"	288
XXXV.	Plan: Franklin Park, Boston . .	*Courtesy of Boston Park Department* .	"	298
XXXVI.	Topographical Map, Estate near Boston .	*F. A. Castle* .	"	356
XXXVII.	Preliminary Plan, Estate near Boston .	*Henry P. White* .	following	356
XXXVIII.	Grading Plan, Estate near Boston . .	*H. V. Hubbard* .	"	356
XXXIX.	Profiles, Estate near Boston . . .	*F. A. Castle* . .	"	356
XL.	Planting Plan, Estate near Boston . .	*H. V. Hubbard* .	"	356

TAILPIECES

Gate of Lower Garden, Villa Lante .	*Henry P. White* . . .		23
Garden Theater, Villa Gori . . .	*H. V. Hubbard* . . .		61
Gateway to Terrace, Packwood House .	*Henry P. White* . . .		87
Wall Fountain, Nervi	*Henry P. White* . . .		230
Well-curb, S. Stefano, Bologna . .	*Henry P. White* . . .		324
In a Modern New England Garden .	*Henry P. White* . . .		337

LIST OF ILLUSTRATIONS (*Continued*)

PHOTOGRAPHS

		PLATE
In the High Sierras, California	*H. V. Hubbard*	*Frontispiece*
The Taj Mahal	*Roland B. Dixon*	1
Rousseau's Tomb, The Isle of Poplars, Ermenonville	*H. V. Hubbard*	2
A Bridge, Ermenonville	*H. V. Hubbard*	3
The Temple Garden of Sambo-in, at Daigo, near Kioto	*Guy H. Lee*	4
The Nichols Garden, Salem	*Mary H. Northend*	5
Naturalistic Lawn, Estate near Boston	*N. L. Stebbins*	6
Sequoia Grove	*H. V. Hubbard*	7
A Sierra Mountain Meadow	*H. V. Hubbard*	8
An Upland Pasture	*Bertrand H. Wentworth*	9
The Park, Thoresby House, Wilts	*From Collection of Olmsted Brothers*	10
Desolation: A Study in Landscape Effect	*H. V. Hubbard*	11
A Small Fall on the Merced River, Yosemite	*H. V. Hubbard*	12
Vernal Fall, Yosemite	*H. V. Hubbard*	13
Nevada Fall, Yosemite	*H. V. Hubbard*	14
The Meadow Road, Arnold Arboretum	*George R. King*	15
After a Frost Storm, Mt. Osceola, N. H.	*H. V. Hubbard*	16
Snow: A Study in Composition in Line	*Bertrand H. Wentworth*	17
Snow-laden Pines: A Study in Texture	*Bertrand H. Wentworth*	18
Light and Shadow, Villa Lante	*H. V. Hubbard*	19
Monhegan Spruces: A Study in Atmosphere	*Bertrand H. Wentworth*	20
Long View over Meadow in the Park, Muskau	*H. V. Hubbard*	21
New Hampshire Intervale	*Thomas W. Sears*	22
View from Tehipite Dome, California	*H. V. Hubbard*	23
A Brook in the Sierras, California	*H. V. Hubbard*	24
The "Oxbow," Bear Camp River, N. H.	*William Homes*	25
Waterside Planting, Sion House, Brentford	*From Collection of Olmsted Brothers*	26
The Spring in the Wild Garden, Estate at Newport, R. I.	*H. V. Hubbard*	27
Bridge, Stourton, Wilts	*From Collection of Olmsted Brothers*	28
The Lower Garden, Villa Lante	*H. V. Hubbard*	29
The Garden of "Weld," Brookline, Mass.	*Courtesy of Charles A. Platt*	30

		PLATE
The Circuit Drive, Franklin Park, Boston	*Courtesy of Boston Park Department*	31
Scarborough Pond Bridge, Franklin Park	*Courtesy of Boston Park Department*	32
The Tennis Courts, Ellicottdale, Franklin Park	*Courtesy of Boston Park Department*	33
Steps in Naturalistic Setting, Franklin Park	*George R. King*	34
Overlook Shelter, Franklin Park	*George R. King*	35
The Town of Baltit, Hunza: A Study of Adaptation of Structures to Topography	*Roland B. Dixon*	36

AN INTRODUCTION TO THE STUDY OF LANDSCAPE DESIGN

CHAPTER I

INTRODUCTION

DEFINITION OF LANDSCAPE ARCHITECTURE — ITS PROVINCE — ITS DEVELOPMENT AS A SEPARATE PROFESSION — ITS REQUIREMENTS OF THE PRACTITIONER — HIS PREPARATION — HIS OPPORTUNITIES AND REWARDS.

Definition of Landscape Architecture

"Landscape architecture is primarily a fine art, and as such its most important function is to create and preserve beauty in the surroundings of human habitations and in the broader natural scenery of the country; but it is also concerned with promoting the comfort, convenience, and health of urban populations, which have scanty access to rural scenery, and urgently need to have their hurrying, workaday lives refreshed and calmed by the beautiful and reposeful sights and sounds which nature, aided by the landscape art, can abundantly provide." *

The Province of Landscape Architecture

Man obtains from his environment two things which he desires, usefulness and beauty, and all material progress in civilization has consisted in his modification of his surroundings to serve these two needs. Very early in his history he shaped the economic changes which he made in the earth's surface so that they gave him also an esthetic satisfaction. This satisfaction was due in great measure to the fact that the changes were obviously man-made; they bore witness that he had impressed his ideas on the stubborn natural material. Much later in his development — almost, it might be said, in modern times — came the period when man, instead of being isolated and overpowered in the midst of wild nature, found himself cramped and oppressed by the works of his own hands, and sought relief in the esthetic pleasure to be derived from landscape which expresses not man's will but the operation of natural forces.

* From letter of President-Emeritus Charles W. Eliot to the Editors of *Landscape Architecture*, October, 1910, vol. 1, no. 1, p. 40.

The province of landscape architecture is to guide man's modification of the landscape so that he may get the greatest possible esthetic satisfaction of one or both of these two quite different kinds. The resulting beauty might be, at one end of the scale, that of the formal surroundings of a palace — architecture in natural materials to show man's magnificence — or, at the other extreme, that of a woodland solitude — apparently an age-long natural growth — a place of rest from all the works of man.

In this new province, there must be a new type of designer. In producing the formal setting of a palace, the landscape architect's equipment may indeed differ from that of the architect only in his knowledge of plants and what effects can be secured with them; in reproducing or in intelligently preserving a natural woodland, however, the landscape architect must have a knowledge of nature's processes, a familiarity with nature's materials, a sensitiveness to the natural beauty of rock and wood and water, which does not form the professional equipment of any other artist.

evelopment of andscape rchitecture as Separate rofession

When a new profession has come to be recognized, or when an old profession has been separated into several branches, the fundamental cause for this subdivision of field has always been the same: the discovery of so many new facts, or the increase in importance of so many known facts, that one man cannot master them all. With the handling of a newly segregated field of fact will come the acquisition of a new technique, the elaboration of theory in some new direction, even the growth of a new technical language, which also take time to master.

This is what has happened in the case of landscape architecture. Within comparatively recent years, there has come a general recognition of the value to the public of designed and organized cities, and of parks, reservations, and other out-of-door spaces, and a greatly increased interest in private pleasure-grounds of various kinds. There is now an effective demand for designing skill using as materials ground forms and vegetation, and for designing skill in the arrangement of landscape and architectural forms — streets, parks, buildings, — in larger unities, for public use.

This demand has been met by the rise of a separate profession, because the materials and technique of this new field are not those

of the older allied professions of architecture and engineering, and are quite as difficult to master within an ordinary lifetime. And in no field is it possible to design effectively "on general principles" without a detailed personal knowledge of the materials and technique.

Requirements of the Profession

Like Architecture, its sister profession in the Fine Arts, Landscape Architecture requires of its practitioner diverse abilities not often found in the same person: the esthetic appreciation and creative power of the artist, together with the executive skill of the business man. The landscape architect should know the materials of his art: ground forms, vegetation, and structures in their relation to landscape. He should know on the one hand what results are physically possible of accomplishment with these materials, and on the other hand what kinds of beauty these materials can best produce, and what kinds of beauty were better attained in the materials of some other art. Since, for the most part, the landscape architect cannot produce at will in his design all the forms which he might desire, but must choose from among the forms offered by nature those which will suit his purpose, he cannot be confident that his design is possible of execution unless he possesses an accurate first-hand knowledge of the plant materials and of the ground forms from which he must choose the elements of his composition. Since the beauty of vegetation is that of intricacy, of multiplicity, of growth and change, the landscape architect's experience and power in design will come to be quite different from that of the architect, who deals with definite, rigid forms and balanced masses. Since the fundamental organization of his naturalistic designs, of his preservation and enhancement of natural scenery, will be the real or apparent manifestation of the untrammeled forces of nature, the landscape architect must have humbly studied the forces which carve the valleys, and which direct the flow of the streams, and he must be keenly sensitive to the esthetic unity of a mountain or the perfect growth of a ground-covering fern, which may dominate or decorate his nature-inspired work.

The landscape architect cannot carry out his designs with his own hand; so he must use some means of conveying his ideas to those who are to execute the work. As this work usually extends over a considerable period of time, it is necessary that the landscape archi-

tect's design be recorded in some fairly permanent form. He should therefore acquire not only facility in oral statement, but also ability in the expression of his ideas by drawings, in plan, elevation, and perspective, and in written reports to his clients, and detailed specifications for the execution of the work.

To carry his design into actual construction, the landscape architect must deal with men as a business man. He must be able to impress the desirability of his designs on his clients, to organize his own office and field assistants, and to handle the contractors with whom he deals. This ability must be plainly more the result of innate force and practical experience than of any theoretical instruction.

Preparation for the Profession

Any one who endeavors to make himself an efficient landscape architect will have to acquire creative power in two ways: he must accumulate a store of facts and he must develop an ability to organize this experience, to analyze his individual problems, and to attack the solutions of these problems in such a logical way that at the end he may be convinced that he has arrived at the best solution possible for him under the given conditions. While practical experience will provide a man with a store of facts, only long practical experience can tell him what facts are most significant and how they may be best related. Here lies the greatest value of systematic instruction in a school. A man may thus learn, from the experience of others, a system of organization which may greatly help him in evaluating and interpreting his own experience, and he may learn at the same time a method of approaching his problems which will save him from a considerable number of the wasteful mistakes inevitably made by any undirected beginner. Doubtless when he is finally settled in his professional life his methods will be his own, but good schooling should save him years of experiment and should give him a broader outlook on his work than he would be at all likely ever to acquire, without schooling, in the pressure of professional activity. But instruction in a school alone will not fit a man for independent practice. It is almost always desirable that he should serve an apprenticeship under some established practitioner, so that his ideas may be first put to the test of actuality under the guidance of practical experience.

Throughout his life the landscape architect must be a student of

natural compositions, and of the work of his fellow artists, in his own field and also in architecture, painting, and the kindred arts. It is plainly important that his observations should cover as great a range of character and effect as possible — different countries, different periods, and widely varying types of natural scenery — for these observations are the raw materials from which all his designs must be made. But here again, the value of his observations in his future designs will depend almost wholly on the keenness of his analysis, and on the certainty with which he determines in each case the source from which his pleasure in the composition is derived.

Opportunities and Rewards

A landscape architect adopts his profession for two reasons: he wants to earn a living, and, properly more important, he expects to enjoy doing his work. Now part of this enjoyment will be in a way incidental: he will enjoy the outdoor life, the familiarity with plants and other outdoor objects, the intercourse with many different people; if he has executive ability, he will enjoy getting things organized and accomplished, but if he is, as he should be, an artist, he will most enjoy producing original and beautiful things — expressing himself by means of arrangements of forms and colors in outdoor objects as the painter does with oils and canvas, as the sculptor does with marble, as the writer does with language.

Another of the rewards of the landscape architect is his knowledge of the pleasure and well-being which his work may bring to others.* The designer of a private place, large or small, may take real satisfaction in the outdoor relaxation and pleasure which he has made possible for his client. The designer of a park may feel well repaid by the knowledge that thousands of people are offered a means of innocent recreation and a source of refreshment from the insistency of the crowded town. The man who contributes his skill to the design of a new city may properly feel that he has acquitted himself well in the world, if through his efforts the life of many future generations of his kind is made more healthful, more efficient, and more enjoyable.

* Cf. the remarks on the opportunities and rewards of the profession made before the American Society of Landscape Architects, by President-Emeritus Charles W. Eliot, published in *Landscape Architecture*, Apr. 1911, v. 1, pp. 145–153, and entitled *Welfare and Happiness in Works of Landscape Architecture.*

CHAPTER II

THEORY OF LANDSCAPE DESIGN

LANDSCAPE DESIGN DEFINED — Esthetic and economic aspects — PSYCHOLOGICAL BASIS OF ESTHETIC THEORY OF DESIGN — Sensation, perception, intellection — Pleasure — Sources of pleasure in sensation — In perception and imagination — In intellection — Experience, emotion, and association — Esthetic analysis in design — UNITY — Logical — Ethical — Economic — Esthetic — Esthetic expression and impression — DEFINITION OF BEAUTY — TYPES — IDEALS — TASTE AND STYLE — LANDSCAPE CHARACTER — LANDSCAPE EFFECT.

Landscape Design Defined

The word "design" is commonly used in two different ways. We say "design and construction" when we mean to differentiate the decision as to what is to be done, and the record of this decision, from the actual doing of the work. We say "good practically but bad in design" when we mean, for instance, that a building serves its purpose as shelter, but does not serve its purpose of giving visual pleasure. This use of design as meaning only esthetic design is confusing, for, as we shall see later, no sharp line can be drawn in most actual work between esthetic and economic design. In this book the word "design" will be used as meaning the art or act of determining the character of an object so that it shall serve any predetermined purpose or purposes, and the term "landscape design" will be used simply as meaning design in landscape materials.

Esthetic and Economic Aspects

As landscape architecture is a fine art, all of its works must be designed to some extent to be pleasing in appearance; but the great majority of such works are intended to serve also some other purpose of the user. Landscape design has, almost always, an economic as well as an esthetic aspect. The economic considerations affecting the design of landscape are best set forth by discussing the important types of designed areas organized according to use, such as the garden, the private estate, the park. These we take up later in Chapter XI. The general esthetic principles underlying landscape design we will dis-

cuss now, however, as far as is necessary for our purpose. These principles are fundamentally the same as those of design in all the fine arts, but they differ in application just as landscape architecture differs from the other fine arts, in that they are applied to the particular materials or elements of design with which landscape architecture deals: namely, ground forms, vegetation, and structures in their relation to landscape.

Psychological Basis of Esthetic Theory of Design

In esthetic design, the fundamental thing which the artist is trying to produce is an effect of pleasure in the mind of the beholder. All his modifications of the form, color, and texture of his work are only means to the end of this mental effect. Plainly, then, the principles of such design must be the principles of the production of effects on the mind by external objects; in other words the principles are certain principles of human psychology. From a consideration of these principles, therefore, we should be able to see more clearly by what mental processes pleasure arises from external objects, and what characteristics of the objects cause the pleasure. We should thus be able to go more directly to work to bring about pleasure by proper use and modification of the characteristics of the objects in our designs.

In landscape architecture we are concerned almost exclusively with those effects which are made on the mind through our sense of sight, and indirectly through its coöperating sense, touch, including feelings of muscular activity, which does so much to interpret our visual impressions. The sensations received through taste, smell, and hearing, though also to be considered, are not often so important in landscape design.

Sensation, Perception, and Intellection

Our senses, acted upon by the world about us, give us various sensations. From these sensations we come to be able, by experience and habit, to perceive the existence of objects in the world, and to attribute to them the characteristics which our senses discover to us; and also, building from our memories of real objects, we may imagine objects which have their characteristics related differently from any which we have actually known. We may then proceed to think about these objects, real or imagined, and about their relations in the world, and to come to conclusions as to their usefulness, or whatever else about them we wish to consider. These three processes, by which we gain all our

knowledge of the material world, are called by psychologists sensation, perception, and intellection, and the results of these processes are called respectively sensations, percepts, and concepts.

It should be remembered that although these various processes of the mind can be talked of separately they may go on together. A man makes no conscious distinction among them, and indeed even in the case of perception he is usually quite unconscious of the process until his attention is arrested by the thing perceived.

Pleasure

All mental processes are accompanied by emotion, whether vivid or pale, and when we say "pleasure," we mean only any of the many different forms of emotion which are pleasurable; that is, pleasure is a name for a certain character of emotions. The three mental processes which we have just mentioned may each be accompanied by pleasure which we may conveniently call: sensory pleasure, perceptive pleasure (including pleasure of imagination), and intellective pleasure; and which, like the three processes, are usually not consciously distinguished. For instance, a man stands upon a terrace overlooking a garden. He feels the sunshine, he smells the flowers, his eyes receive the stimulus of bright color, and he gets from all this a pleasure of sensation, which is simple, direct, and hardly capable of further analysis. At the same time, however, he perceives the symmetrical arrangement of the beds, the orderly progression of the heights of the flowers, and he gets from this a perceptive pleasure. He may also be stimulated to imagine quite another garden, of different design, for a different situation which he has in mind, and from this unreal image he may derive a pleasure of imagination as vivid as that given by the real garden before him. Further he understands the permanence and economy of the construction, he believes that a difficult problem has been well solved, in the real garden or in that of his imagination, and he receives from this knowledge intellective pleasure.

Pleasure in Sensation

If we analyze the sources of pleasure of sensation, we find that a sensation will have a pleasant quality according to the duration, intensity, and character of the stimulus. A sensation may be pleasurable at first and then through its duration become painful or annoying, as, for instance, too long hearing of a continued musical note, too long gazing at a brilliant object; or by continuance and repetition a sensation

may become unnoticed, as does the sound of falling water. Then again, whatever its character in moderate intensity, it may become painful in increased intensity; warmth may be pleasant but heat unpleasant, a chime of bells heard from a distance may be enjoyable, but they would hardly be so to a hearer in the belfry. Pleasure due to the character of the sensation arises, in some cases at least, from order among the stimuli which cause the sensation; for instance, a clear note, a harmonious chord, a pure color; but in some cases we can only say, as yet, that common experience teaches that certain stimuli give pleasant mental effects; for instance, a sweet taste, a pleasant smell. These pleasures also may be due to order among the stimuli that produce them, but in the present state of our knowledge of the machinery of the human senses, this is difficult to prove.

Pleasure in Perception and Imagination

Since perception of a thing is by its very nature the segregation in the mind of the sensations coming from the thing, their comparison with memories of previous experience, and their attribution as characteristics all to the same exterior object, it follows that the pleasure of perception as such must be sought in the relations of the sensations to each other, in the relation of the percept to the memories, desires, and emotions present in the mind at the time, and in the character of the memories and emotions stirred by the particular act of perception.

Perception will be attended with pleasure if the various sensations concerned are harmonious or have qualities in common. Part of this pleasure is doubtless due merely to ease of perception. The unity of a thing is only another name for the common law governing, or the common characteristic pertaining to, all the sensations received from the thing. And the more fully the law is exemplified, the more readily is the unity and separate existence of the object perceived. But apart from mere ease of perception, harmony of the sensations concerned in an act of perception gives a definite and very important pleasure of its own. This pleasure forms part of the effect of every successful esthetic design. It is the end in view whenever a designer attempts to unify his work by repetition or sequence or balance of parts. This we discuss under composition in Chapter VII.

Perception of an object will be pleasant, if the percept accords with the desires in the mind. To a wayfarer on a hot day a shade-giving tree

is a pleasant thing, even if he may not rest under it. Perception will be pleasant if the memories called up are in accordance with one another. To an architect a building with all its detail in the same style would be, in so far, pleasant, but a Gothic porch on a New England colonial farmhouse would be unpleasant to him, even if by some miracle its proportions were harmonious with those of the house. Here his displeasure would be caused by the incongruity of association. Perception will be pleasant if the memories which are stirred by it are in themselves pleasant. The smell of box bushes on a sunny day may be pleasant to one who loves old colonial gardens, not because of any great pleasure from the smell itself, but because of the pleasant memories called up by the smell.

In all these cases of pleasure in perception, the pleasure arises in the same way whether the pleasurable thing is a real object perceived at the time, a real object remembered, or an unreal object, created from the stuff of memory by the power of the imagination. And in most of the above cases it is obvious that the cause of the pleasure of perception is some kind of harmony or unity. In a sense it can be said that seeking to discover unities in the world is the whole business of our mental activity, so that unity has a right to the high place which it holds in discussions of design. It is the essence of the existence of objects. Without it there can be no design; without it in some measure there can be no objects.

Pleasure in Intellection

Intellection — or ideation — is the mental comparison of a number of percepts and the discovery of relations among them, thus producing a concept. The pleasure of intellection will depend partly on the accomplishment of the discovery of these relations, as for instance completion of a task, solution of a puzzle; and partly the pleasure will depend on the number and completeness of the relations discovered, that is, on the unity found to exist among the percepts and between the concept just formed and the rest of the content of the mind. Exceptionally, on the other hand, the pleasure is due to a comic element, as in the case of the "surprise" features in the Italian and older German gardens, which owe the pleasure of their effect, when it is pleasant, to the very incongruity of the experience of their victim with what he would reasonably have expected.

The pleasure of intellection may be very complicated and very keen. For instance, in making a planting plan for a bed in a garden in a difficult situation, a man finally produces an arrangement of twenty different kinds of plants which shall go together in sequence of bloom, which shall be harmonious in the color of the various plants that bloom at the same time, which shall be pleasantly related as to height, and which shall all be suited to the cultural and climatic conditions. The intellective pleasure which he experiences on completing this portion of his plan is plainly of two kinds: first, pleasure in having accomplished his task, and then pleasure in the complete and complicated unity of his result. To the spectator also this intellective pleasure is open, although the pleasure of creation is largely the reward of the designer alone.

Sensory, perceptive, and intellective pleasures are, then, all to be obtained as the results of the designer's skill. He should recognize each for what it is, however; he should strive for the greatest total result, and he should be sure that in attaining one kind of pleasure he has not sacrificed a greater amount of another.

That these mental effects are the real values to be produced by the designer is by no means a new conception in the literature of landscape architecture. Repton said,

"I confess that the great object of my ambition is, not merely to produce a *book of pictures*, but to furnish some hints for establishing the fact, that *true* taste in *Landscape Gardening*, as well as in all the other Polite Arts, is not an accidental effect, operating on the outward senses, but an appeal to the understanding, which is able to compare, to separate, and to combine, the various sources of pleasure derived from external objects, and to trace them to some pre-existing causes in the structure of the human mind."*

A present-day writer, Sir George Sitwell, has given a psychological basis to his delightful book *An Essay on the Making of Gardens.*

"Art has another function also: it is concerned not only with the scene but with the mind of the beholder, for more than half of what we see comes from the mind. Here then at last we have found the garden-magic of Italy, in the domain of Psychology." †

* End of the introduction to *Sketches and Hints on Landscape Gardening*, 1794. (See REFERENCES.)

† Page 48. (See REFERENCES.)

Experience, Emotion, and Association

From the ordinary experience of his life and from observations which he purposely makes, the artist acquires a store of impressions which are the material from which his designs must be wrought. These impressions tend to be chosen from the infinity of impressions which are presented to the mind, according as they seem to find their kin in the already acquired mental content. If they are so akin, the pleasurable emotion which attends their dawning perception attracts the attention of the artist to them and makes them valuable and chosen; and those things which cause noticeable emotion when they are perceived are likely to hold a place in the memory. The artist's emotion may be simply esthetic pleasure, or it may be the pleasure of finding something which obviously he can use in his design, or it may be caused by a congruity, of any degree of complication and indefiniteness, between the perception and whatever else is in his mind at the time, — some relationship with the memories, some faint associational flavor so subtle that nothing may surely be said of it, except that its presence in our thoughts is a pleasure. The designer whose mind is open and sensitive to beautiful things, who responds to each new experience of beauty with a powerful emotion, will in the very nature of things win many valuable impressions from experiences which would be dull and unprofitable to a less sensitive person. Also a keenness of interest in facts not primarily esthetic will in the long run add to an artist's esthetic power. An ability to appreciate the beauty of free landscape, for instance, while it must have its beginnings inborn in the mind, may be greatly developed by a definite study of landscape forms, which leads to the perception, and so to the enjoyment, of subtler relations which without study might go unseen.*

* This idea is discussed in *The Landscape as a Means of Culture*, an article by N. S. Shaler in the *Atlantic Monthly*, Dec. 1898. (See REFERENCES.): —

"It is evident that our culture is near the station where we may hope for some effort to develop the landscape sense by a systematic training in the arts which may enable us to appreciate scenery. . . .

"With the advance which an assiduous training of the landscape sense brings, the observer finds himself less in need of the human note in the view; his development follows the course by which the landscape motive became established. . . .

"From the limited though varied aspects of the overhumanized views in and about the town, the student should pass, in a well-devised gradation, to the scenes

If the emotional side of his esthetic perception is strong, the artist's experience will be richer in association, because the emotions will stir memories of previous emotions, and the kindred emotion so recalled may recall with it the memory of an experience which, except for this, is totally different. Thus, through similar emotional concomitant, experiences in one realm of the senses may be, as it were, translated into experiences in another. The harmonies of the symphony which we now hear may be enriched by the glories of a remembered sunset. It is this kind of association that makes us speak of a "loud" color, a "smooth" sentence, or refer to architecture as "frozen music." *

There are many percepts which are indissolubly bound up with memories of muscular motion; not only the percepts of distance and height which first expressed themselves to the mind in terms of long

where pure nature, though the fields be tilled, controls the expression, and thence by a further step to the primitive lands where there is no trace of the hand of man. As he departs from the realm of excessive culture, where the expression of the earth everywhere is controlled by the artificial, the need increases of an enlargement of the conception by the understanding of how the natural forces have shaped the view. . . .

" If, as seems likely, we can bring into definite shape, by educative means, the emotions which lead to pleasure in the landscape, we shall thereby add another important art to those which serve to dignify our lives. The art of seeing the landscape has a certain advantage over all the others we have invented, in that the data it uses are ever before those who are blessed with eyes. Outside of prison, a man is sure of the sky — the largest, most varied, and in some regards the richest element of all scenes. The earth about him may be defiled, but rarely in such measure that it will not yield him good fruit. Every look abroad tempts him beyond himself into an enlarging contact with nature. Not only are the opportunities for this art ever soliciting the mind, but the practice of it demands no long and painful novitiate. There is much satisfaction at the very beginning of the practice; it grows with exercise, until it opens the world as no other art can do."

* " In point of strength, pitch, velocity, and rhythm, sounds present to the ear a *figure*, bearing that degree of analogy to certain visual impressions which sensations of various kinds bear to one another. As there is, physiologically speaking, such a thing as a vicarious function (up to a certain point), so may sense impressions, æsthetically speaking, become vicarious also. There is a well-founded analogy between motion in space and motion in time, between the colour, texture, and size of an object and the pitch, ' timbre,' and strength of a tone, and it is for this reason quite practicable to paint an object musically."

E. Hanslick, *The Beautiful in Music*, p. 53 of English translation of 1891.

walking and hard climbing, not only the percepts of form which were associated with extension of the arms or position of the grasping hand, but also percepts of shapes and spaces which are associated, perhaps quite unconsciously, with a cramped and stooping posture or with a fine freedom of movement, because the emotion felt on beholding the shapes, and recalled in connection with them, is the same as that received through the particular muscular attitude which they recall.* When any such percept comes to the mind, the associated muscular motion is recalled, sometimes indeed so vividly that the motion itself is automatically reproduced, — for instance, the wide-spread arms of a man describing a vast open landscape. And the sensations necessarily accompanying this actual motion or muscular tension intensify the emotion coming from the percept. There are, of course, a great many percepts which are not themselves capable of direct motor expression, but under these circumstances the necessity for some expression finds vent in movements or muscular tensions, the emotional concomitant of which is similar to the emotional state which is being expressed. Contempt, for instance, may be expressed by a wry face which more directly represents the perception of a bad odor. A man looking at a picture of a row of columns in perspective may say, with appropriate gestures, "They grow smaller and smaller and smaller." He perceives the spatial sequence in the picture through the temporal sequence of the shifting of his own attention, and this he expresses by a temporal sequence of words and movements.

In their associational appeal to emotion, the senses of hearing, taste, and smell are powerful. Although they are at a disadvantage in comparison with the sense of sight in the amount of direct information regarding an observed object which they can furnish to the mind, still, and it may be for this very reason, the emotional effect of sounds and particularly of odors is frequently very striking. The smell of a certain flower may recall infallibly a certain emotion and perhaps a certain place, because the smell stirs in the mind few other memories on which the attention may fall. These simpler impressions are by no means to be neglected by the designer. The scent of flowers, the song of birds, the humming of bees, although they do not intrude them-

* The well-known theory of Lipps as interpreted by d'Udine, in *L'Art et le Geste.*

selves upon our attention, even though they pass unnoticed by our consciousness, yet constitute a background of association, an atmosphere of reality and pleasurable completeness, which forms no small part of our feeling of unity with the joyous and ordered universe which we behold.*

Through this infinitely complicated associational connection of all our mental content, — our memories, our emotions, our present sensations and perceptions, — an experience in any one realm of the senses, or in any one field of thought, finds, as it were, kinship in the mind with other experiences widely different, and it is idle to attempt to say what train of creative thought, what powerful emotion, may not be aroused by any apparently trivial experience.

The pleasure caused by any work of art will be different in the mind of each beholder as the mind of each beholder is different. The designer can be sure of his effect only in so far as he can know the mass of memories to which his design must appeal. There are some experiences which are the common lot of all mankind throughout the ages, and works of art which appeal to the memories of these will appeal to every man, and will live as long as these memories remain the common property of man. But works of art which depend for their interest on knowledge or desire born of a transitory period will die with the desires which brought them into being. In the same way, a work of art designed for an individual owner, without regard to the common memories and training of mankind at large, is apt to please no one but the owner and will probably not please him for long.

The designer whose broad interest has kept him in touch with many and varied ideas, who has accumulated mental material of many kinds, and organized it in many ways, has acquired a very real power when he comes to deal with clients of different sorts. He is able to put himself in their place, to see the relative values of things as they see them,

* The pleasure we derive from colour, scent, and song in the garden is a by-product of evolution, due to that similarity of environment and of power to respond to it which has cast our senses almost in the same mould with those of the insects and birds; and the significance of the fact is that life is one and man a part of nature, not a supernatural being who has been suddenly intruded into a garden." Sitwell, p. 49, note 1.

and perhaps, appreciating his client's inchoate wishes, to complete them consistently, to relate them logically to the special circumstances and bring them to a successful expression. And he may thereby evolve something which the client should certainly like better than any "ready-made" design, and which may well be more original than anything which could have sprung from the designer's brain without the stimulus of the client's personality.

Esthetic Analysis in Design

The landscape architect produces the various forms of esthetic pleasure which we have been discussing, through analysis of his problem into its various pleasure-giving possibilities and their synthesis in his design. This process may not be conscious. It is true that the brilliant man, the genius, may arrive at his goal by "feeling," and not by consciously applied knowledge. He may make a composition which produces sensory, perceptive, and intellective pleasure in the highest possible degree without having phrased to himself the possibilities of these forms of pleasure. But this can be done only by a genius, and few of us are geniuses and none of us are geniuses all the time. In most cases, therefore, this esthetic analysis can well be a conscious, deliberate, and business-like process, which, while it will never enable an ordinary man to produce a superlative work of art, will at least help him to become a good workman, and prevent his making many elementary mistakes.

Unity

In our discussion of the various forms of pleasure, we seemed to have discovered that this pleasure, which it is the purpose of the designer to create in the mind of the observer, is due to the presence of a perception of some kind of unity. Man lives in and is part of an organized universe. All the impressions which he receives, all the objects which he learns to recognize, all his ideas, have organization as their constant essential characteristic, and the completeness and kind of this organization might well be the source of his pleasure in them.

We have different names for this completeness of organization, according to the field in which it is found. The unity may be perceived in the field of logic, in which case it is called truth, that is, the complete accordance of a group of ideas with universal law as we know it; or in the field of morals, in which case it is called goodness, that is, the

complete submission of all aspects of an act to a moral purpose; or in the field of economics, in which case it is called usefulness, that is, complete and organized fitness of all the qualities of an object to a definite use; or in the field of esthetics, in which case it is called beauty.

Logical Unity

We can justly speak of judging of the truth of a design, when we determine the truth of the designer's underlying ideas, when we compare his methods of organization or synthesis with what we consider to be fundamental and correct logical methods. Where our observation of another person's design leads us to the conclusion that the designer has based his work on premises which we consider to be contrary to fact, or on reasoning which we consider illogical, our displeasure may be said to be due to a perception of the lack of truth of the designer's ideas; but much more frequently our displeasure falls not upon the false ideas, but upon some of their ill-contrived or ugly concrete results. For example, the fidelity of a landscape architect to the natural character of a landscape which he is preserving might be commended as truthful expression in his design. If he introduced an object discordant with this character, he would probably be blamed for the ugliness of his design, but the cause of the ugliness would be the falsity of his esthetic conception. Sincerity in design, the obvious whole-souled logical carrying-out of a given premise to its conclusion, commonly gives intellectual pleasure in the "truth" of the designer's treatment even though the observer does not agree with the premises. What is most commonly spoken of as lack of truth in design is the case where the designer endeavors to make a thing appear what it is not, where he paints imitation stonework on a board fence or constructs for decoration a door which cannot be opened. Attempts of this kind range from puerile or cheap deceits to perfectly legitimate effects, such as diminishing the scale of the farther part of a design, that the whole design may seem larger. This aspect of the subject we shall discuss more at length in Chapter VII.

Ethical Unity

The moral consideration has a place when one judges the result on the community of the completed work of the designer. Parks have a positive ethical value, that is, their existence may greatly promote the moral welfare of the community, and indeed this is one of the strongest

single arguments for their existence.* The designer should also have in mind minor ethical considerations, and avoid in his design such arrangements as might serve as temptation to ill-doing. But the ethical value in landscape work is to be obtained only through the esthetic and economic value of the objects created, and so ethical unity, while a moving force, is seldom a directly governing consideration in landscape design.

Economic Unity

The great majority of the objects which man makes take their shapes, as they take their names, from their fitness to some economic purpose. It is difficult for man to refrain from attempting to invest them with some beauty, but the first cause of their creation is their use. The primary value of such objects is their ability to satisfy a physical need; they give a man warmth or light or shelter or whatever one of the innumerable satisfactions he is for the instant engaged in winning from the surrounding world. The well-considered fitness of a thing to its use gives a pleasure beyond the pleasure of the use, beyond the mere knowledge that this pleasure is possible: an intellectual pleasure in the completeness of the organization of the thing itself. Also, the completeness of physical organization which makes an object serve well its economic purpose is very apt to manifest itself in such a relation of part to part that the object gives also esthetic pleasure.† No example of this is better than the often-quoted sailing ship.‡

* " . . . Every evil to which men are specially liable when living in towns, is likely to be aggravated in the future, unless means are devised and adapted in advance to prevent it." . . .

" Is it doubtful that it does men good to come together . . . in pure air and under the light of heaven, or that it must have an influence directly counteractive to that of the ordinary hard, hustling working hours of town life? " . . .

"The question remains whether the contemplation of beauty in natural scenery is practically of much value in counteracting and alleviating these evils. . . . I do not propose to argue this question . . . for if the object of parks is not that thus suggested, I know of none which justifies their cost."

F. L. Olmsted, Sr., *Public Parks*, 1902, pp. 32, 40–41, 113–114. (See REFERENCES.)

† Cf. *What would be fair must first be fit*, reprinted in *Charles Eliot, Landscape Architect*, pp. 549–553. (See REFERENCES.)

‡ Cited by F. L. Olmsted, Jr., as " an example used by my father in discussing village improvement," in *City Planning: an Introductory Address*, pp. 31–32 in Proceedings of National Conference on City Planning, 1910. Also published separately by the American Civic Association.

Esthetic Unity

We are to some degree concerned with unity in the fields of logic and ethics, and, since we are practitioners of an applied art and a profession, we have, almost as a constant factor, the economic element of use in all our designs; nevertheless, since we are practitioners of a fine art, our field is that of esthetics, and unity in this field is our especial concern.

Esthetic Expression and Impression

As we have found, the artist in the course of his life receives many impressions from external objects which he calls beautiful, that is, he perceives with pleasure the unity of certain relations within these objects, and he stores up in his mind the memory of the pleasurable relations. When he designs, when he sets out to produce a pleasurable emotion in the mind of some one else who shall behold the object which he makes, he arranges or organizes the parts of this object according to these remembered relations; that is, he expresses in his design those relations with which he has himself been previously impressed. And the pleasurable emotion in the mind of the beholder arises from his perception of this organization, of this subjection to a common law, of this unity of the relation of the parts of the object. The state of mind of the observer might be exactly the same if the pleasurable relations which he finds to exist in the thing observed had come there purely by accident and not by design. It is the observer's perception, his own organization of the relations, that causes his pleasure. In this sense, then, a thing which is perceived to be unified and organized may be said to express to the mind of the observer this unity and organization; and in the field of esthetics, completeness of this expression, perception of complete esthetic organization with its necessarily accompanying pleasurable emotion, is what we call beauty. Actually, we objectify this pleasurable perception and we attribute it as a quality to an object, calling such an object beautiful, just as we objectify our perceptions of yellowness and roundness, which go to make our percept of an orange, and call the orange round and yellow. And so, speaking objectively, objects are called beautiful which have a physical organization such that their characteristics cause this perfect synthesis.

Definition of Beauty

We will, then, define beauty for our purposes, in the terms of the Italian philosopher Croce,* as "successful expression," "complete

* Benedetto Croce, *Estetica come Scienza dell' Espressione e Linguistica generale*, Milano, 1902. English translation by Douglas Ainslee.

spiritual esthetic synthesis," that is, perception of complete esthetic organization.

Beauty is thus complete unity of organization; ugliness is lack of unity. If a thing has beauty, but fails of being absolutely beautiful, it can in every case be shown that such beauty as it has is beauty of certain parts or aspects which are in themselves perfectly unified. Beauty can exist in one degree only, perfect beauty; ugliness, being disunity, can exist in all degrees, from what might be called beauty with a flaw to disunity so complete that the mind can hardly grasp the dissimilar mass of detail as forming one entity at all.

Many definitions of beauty make it not a perceptive synthesis, as we have just said, but an emotion. Professor Santayana, for instance, says, "Beauty is pleasure regarded as the quality of a thing."* The difference is, we believe, purely one of statement. Any perception is inevitably attended with an emotion, pleasurable or otherwise, this emotion being in a great majority of cases so slight as not to be noticed. As the unity of an object becomes more and more evident, the ease and completeness of the synthesis — arising from unity of impressions, and consonance of these with the mental content — becomes greater, and the consequent pleasurable emotion becomes stronger. Thus a beautiful object, that is, an object so organized as to cause a complete synthesis in the observer's mind, should be perceived with the greatest possible amount of this kind of pleasure. And as the act of perception is in itself commonly unconscious, it is this pleasurable emotion which attracts our attention as the essence of beauty.

The pleasure accompanying the formation of a percept is greater as this percept fits more completely the ideal for this particular kind of percept existing already in the mind of the beholder. The more nearly complete the unity of this percept and its subjection to its own ruling law, the more nearly it usually fits this ideal, since this ideal is normally formed under the same law. It is emphasis of this aspect of the perception of beauty that has given rise to definitions of beauty as approximation to an ideal. The conception of beauty as approximation to an ideal or standard has caused people to believe that there must be universal standards of beauty to which objects must conform

* George Santayana, *The Sense of Beauty*, New York, C. Scribner's Sons, 1896.

to be beautiful; but this overlooks the fundamental fact that the standards for each observer come from his own experience of the world, depend on the constitution of his own mind, and are therefore inevitably different for each observer.

Types

When a man has perceived objects of the same class many times, he discovers (not necessarily consciously) that there are certain characteristics always pertaining to examples of this particular class of object, while other characteristics are only occasionally and, as it were, accidentally present. Thus he forms in his mind a type* of this particular object, that is, a memory of the average, a sort of composite photograph, which he uses thereafter in perceiving examples of the class. But the characteristics of this type are not a mathematical average of the observed essential characteristics of all examples; they are modified, exaggerated, in the direction in which the attention and interest of the observer lies; commonly, therefore, they are modified in the direction of their ability to give pleasure.

Ideals

A type the characteristics of which have been modified as far as is possible for the observer in the direction of perfect unity, consequently in the direction of pleasure, is called an ideal.* This ideal may be entirely the product of the experience of the individual observer, but each man observes what are the ideals of his fellow-men, and it is a human characteristic for each individual to be deeply influenced by these ideals, and to modify his own ideals toward accordance with them. Thus there arise class or social ideals, but it is plain that there is nothing universal or ultimate about them; they are merely composites of individual ideals, which in turn are merely modified composites of individual experiences. There can therefore be in the ideal no characteristic which has not been perceived in some degree in the experience of the observer.

This ideal or idealized type, we may observe, is the result of perceptive synthesis according to some definite scheme; in a sense, indeed, we might say that the ideal itself is another name for the best scheme of organization of the qualities of the object and their mental effect which the observer knows. The ideals, therefore, in each man's mind, being the results of his own modes of synthesis, differ from man to man as men's modes of synthesis differ.

* Santayana, *Sense of Beauty.*

Taste and Style

Taste is the name for the mode of this esthetic synthesis. The mode of organization by which a designer perceives and synthesizes will be the mode of organization which can be perceived in his work as a designer. This perceived mode of organization is called the designer's style, and thus a designer's style is merely the objectified expression of his taste. Taste is involved in the appreciation of beauty; style, in the creation of beauty. The artist must first have the power to appreciate, to perceive organization, but he must have also the power to express, to put his idea into physical form (speech, action, written word, work of sculpture, architecture, landscape architecture), so that some one else can perceive with pleasure the organization on which his work of art is based.

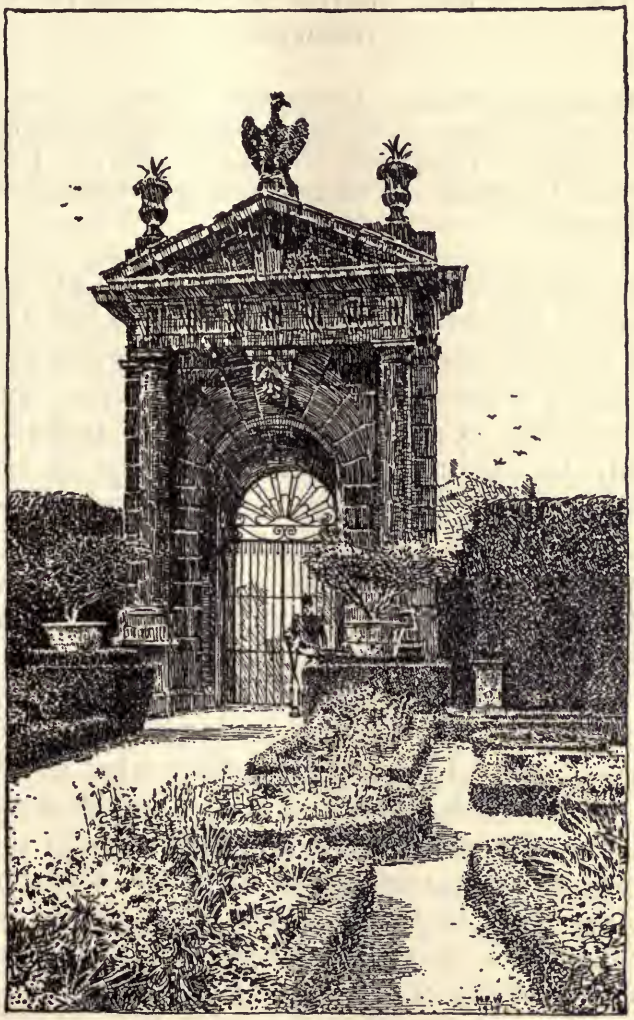
Landscape Character

Just as we can recognize in a man-created object a mode of esthetic organization which expresses the taste of the designer and which we call style, so may we recognize in an example of natural scenery a mode of esthetic organization which is a result of the operation of the forces of nature not guided by man, and which we may call character. Perfection of esthetic organization manifested in landscape character is just as potent a source of beauty as is perfection of esthetic organization manifested in style; but its appreciation often demands a more highly developed esthetic sensitiveness and greater keenness of perception, because its organization is likely to be of a more complicated and less obvious kind.

Landscape Effect

Every object in the world, then, which has style, or character, or their perfection in some aspect — beauty — thereby arouses in us a corresponding emotion; but every object has a further emotional effect, partly due at times to less characteristic attributes of the object, even perhaps to very transitory and unessential conditions, and always varying in some degree with our mental attitude. There is in us a general emotional reaction to the whole experience and its associations, which in its totality we feel as a mood, or state of mind. When this mood is at all definite, we are likely to attribute it as a quality — by a sort of personification — to the object which immediately causes it, and, for instance, to call a landscape peaceful, smiling, majestic, gloomy, as the case may be. This total emotional reaction, commonly attributed to the landscape as a quality, we shall call landscape

effect. Its clarity, its completeness, its power, will be the result and the measure of the style or character manifested in the whole landscape and in its component parts. Although landscape effect is in many cases so subtle and complicated a thing that it is impossible to determine all the causes that bring it about, it is still a great essential to be sought by the designer, for it is the whole and the only ultimate esthetic value which a landscape can possess.



CHAPTER III

TASTE, IDEALS, STYLE, AND CHARACTER IN LANDSCAPE DESIGN

TASTE, individual and community — Development of taste — "Schools" and tradition — Teaching and taste — CRITICISM — Self-criticism in design — CHOICE OF IDEALS — Perfection — Imagination and genius — STYLE: Individual style — Historic styles — Humanized and naturalistic styles — INTERPRETATION OF LANDSCAPE CHARACTER.

Taste, Individual and Community

According to the natural constitution of a person's mind, and according to the store of memories which have come to him through experience, he likes certain things and dislikes certain other things. He has inevitably acquired a personal and individual taste. In most people this is not consciously acquired, nor consciously applied, and is to be discovered only by the man's emotional reaction in each individual case. A man may however go consciously to work to define and cultivate his individual taste. Possibly he may analyze his own experiences and determine what it is in each that makes it pleasing or displeasing, so that in time he has found certain laws by which his own likes or dislikes, at any rate, seem to be governed. His taste, so cultivated, might be quite at variance with the taste of his fellows. Actually, however, as man is a very imitative animal, each person is greatly influenced in his likes and dislikes by what he discovers to be the likes and dislikes of his fellows. This is a very deep-seated instinct, and may well trace its origin to the time when similar thinking by the whole tribe was an important means of tribal unity and safety. It comes about, therefore, that if a number of people live together under the same circumstances, they will have the same taste, to a considerable extent, through similarity of experience and through imitation, and so, even without any conscious fostering of taste, there may be com-

munity or even national taste, recognizable as a fairly constant and definite thing.

Development of Taste

The taste of individuals and of communities develops, or at any rate changes, with time, coördinately with their changing fund of experience. People with undeveloped and simple minds are likely to prefer obvious effects, bright colors, evident and man-made compositions. As their experience of beautiful things increases, they may come to enjoy more subtle and complicated harmonies, more restrained designs, and develop an esthetic sensitiveness which will enable them to see and enjoy beauty in objects which before would have given them no pleasure.*

"Schools" and Tradition

A person's taste may also be developed by being intentionally modeled on that of another. The taste of some artist or group of artists may become especially noted and may collect a group of disciples following a master and forming a "School." A definite body of taste of this kind tends to perpetuate itself for a considerable time in the same way that community or national taste does. Such traditions of taste for work along definite lines are exceedingly valuable to the progress of art. The individual artist who is willing to base his work on the work of his predecessors can profit by their experience; and the conception on which the school is founded may thus ultimately be carried, perhaps through generations of artists, to its most complete expression. But a school so perpetuated may end by producing nothing but bad work, because its fundamental conception, which was at first a life-giving principle, has been supplanted by some of its mere outward manifestations, some trick of the trade, and has become only a dead formula. Or it may be that the constantly changing needs and thoughts of the community may no longer be expressed by the tradition, so that this dies because it finds no new artists to carry it on.

There will always be certain men whose individual likes and dislikes are so strong, whose minds organize their experiences so definitely and so originally, that they refuse to be bound by the common taste of their community. If they have also the gift of artistic expression, and if their ideas prove to be in some measure an expression of the

* Cf. the section Experience, Emotion, and Association, Chapter II, p. 12, and reference to Shaler.

needs of mankind, perhaps felt before but never given form, they may be acclaimed as geniuses, and may put the stamp of their personality on a new school, which will arise and do its work, and eventually in its turn be supplanted by some other conception of art. But not all such innovations are improvements. Many of these conceptions, based on some insignificant consideration or some evanescent public fancy, may be worthy of the name of nothing more than fashions or fads.

Teaching and Taste

Taste may be deliberately developed by teaching. Wherever any professional instruction is given in a fine art, such as landscape architecture, the teacher may strive to cultivate the taste of his pupil in one of two ways. He may in each problem under discussion give his own judgment, and say categorically that in his opinion such a solution is good, such another bad; and by noting enough such decisions, the pupil may be able to learn what the taste of the teacher is and to know what his decision would probably be in a new case. On the other hand the teacher may point out in each problem what he considers to be the important elements, and allow the pupil to make his own decision, which the constitution of his own mind inevitably brings about. In this way, too, the pupil should ultimately develop a definite and consistent taste; but it will be his *own* taste, based less on a cold intellectual memory of another man's decisions, and more on his own natural esthetic preferences. There is little question that the second of these methods is usually much the better.

Criticism

The purpose of the artist is to express to the beholders through his work of art ideas and emotions with which he has been previously impressed in his experience. The critic on the other hand endeavors to understand the work of the artist, to discover the esthetic principles on which its effect is based, and to explain these principles to others so that they may better understand the artist's work and get more pleasure from it. Thus the critic, too, is concerned in having the beholder impressed with the emotion expressed by the artist, but the critic's own work expresses not so much esthetic emotion as intellectual truth. He interprets the design intellectually by setting it forth in its logical relations.*

* "The three types of criticism which I have called classical, romantic, and scientific — the three sorts of critics, described by me as judges, showmen, natural histori-



Drawing by A. B. LeBoutillier

CYPRESS ALLEY, VILLA GAMBERAIA



In actually judging a work of landscape design or of nature, the critic seldom consciously applies the laws of balance, rhythm, repetition, and so on, directly, and considers the thing good or bad according as it does or does not submit itself to these laws; rather does the critic use his knowledge of these laws to differentiate and group his memories of experience so that the vital part of each experience as it relates to visual beauty shall remain in his mind. His actual judgments of objects are made in the light of this experience, to be sure, but rather esthetically and, as it were, automatically than with conscious logic. In this way the critic judges by trained feeling, but in explaining his judgments he must give the logical relations of the causes of his feeling.

Self-criticism in Design

In deciding upon his design, the landscape architect submits the product of his imagination to his own criticism. He may be able in some sort to express his tentative decisions graphically, and so give himself something visible to consider, but for the most part he must call up his projected design before his mind's eye, and accept, discard, modify, recast, until the result is the nearest approach to perfection which he can compass.

Choice of Ideals

In approaching his problem the choice among ideals to be expressed is the first choice which he must make. The determination of his ideal for any particular design may well be a result of various apparently conflicting considerations of use and appearance and the desires of the designer. He may for instance be obliged to choose an ideal more modest than that which he would have taken if no financial considerations had intervened; but it is as absolute an artistic triumph to work out a good design for the informal surroundings of a cottage as for the terrace gardens of a palace. The designer may be obliged to make

ans — co-exist, and have, to some extent, always co-existed, although it is correct to view them as representing successive stages in time. The true critic must combine all three types in himself, and hold the balance by his sense of their reciprocal relations. He cannot abnegate the right to judge; he cannot divest himself of subjective tastes which colour his judgment; but it is his supreme duty to train his faculty of judgment and to temper his subjectivity by the study of things in their historical connections."

J. A. Symonds, *Essays Speculative and Suggestive.* From the essay, On Some Principles of Criticism.

adjustments and accept substitutes in choosing his ideal for the solution of his problem. But, having chosen it, no compromise should enter into his working it out.

Perfection

Perfection is the complete realization of one ideal. There are as many perfections as there are ideals. No one object can contain all perfections. What is beautiful in a Japanese garden may be hideous in a French parterre. Perfection, therefore, often requires in the designer a kind of bigotry. It demands absolute sacrifice of all characteristics, beauties as well as faults, which are not the characteristics of the particular ideal which is being sought. The more clearly defined the ideal and the more whole-souled the pursuit of it, the greater the approach to perfection.

Imagination and Genius

In the choice of this ideal is the landscape architect's great opportunity. Here he must use the constructive imagination which is the power that makes him an artist. No two problems are ever alike, and the true artist will expend his greatest endeavors in discerning and interpreting the essence of each problem, drawing from what seem to be incongruities and difficulties an inspiration for a more original solution than would otherwise have come into being. The more the designer studies each problem in all its relations, without assuming that it is necessarily similar to any problem which has been solved before, the more he trusts his own logical solutions, his own personal emotions, not following blindly the accepted standards of his fellows merely because they are accepted, the more does his work partake of the quality of Genius and the more likely it is to furnish inspiration for the designs of his successors.

Individual Style

The particular experience and training of the individual artist, together with the particular bent of his own mind, combine to give him his own set of ideals and his personal taste. The expression of this taste in his work we call his personal style. From the examination of a number of the works of a finished landscape designer, a critic could tell with some certainty what considerations, esthetic and economic, seemed to the designer paramount and most worthy of attention, and what methods of organization seemed to him the best for producing his effects. If he is the master of a real style and not merely of a number of tricks and trademarks, his work will be characterized by something

more than the recurrence of certain forms of decoration, the choice of certain trees, or the repetition of certain stock arrangements of elements.* The style of a good designer will be characterized rather, for instance, by a severe simplicity and a directness of meeting the needs of his problem, by a delightful and somewhat whimsical play of fancy, or by a reverence for and sympathetic interpretation of certain laws of nature. In many cases his work may be so truly a work of art that it conveys to the beholder very directly the pleasure which the designer felt in the particular mode of organization which he, as it were, recommends to the world by his design, and this pleasure will seem to be the essence of the style. A powerful personal style readily finds imitators, and it may thus come to be, like that of Le Nôtre in France, like that of Olmsted in America, the nucleus about which an historic style crystallizes.

Historic Styles

When we talk of historic styles in landscape design we mean the typical modes of esthetic organization which characterize the different kinds of landscape design which men have done in the past. Let us see on what fundamental circumstances these modes of organization must depend. All landscape designs differ essentially according to three factors in their making: first, their physical environment, — the topography, country, climate, vegetation, materials of construction,† and so on; second, the people who make them and for whom they are made, — their nationality, traditions, tastes, training, and other social conditions; and third, really the product of the first and second factors, their function, the purpose for which they are made, — for producing flowers, fruits, or vegetables, for pleasure in design only, for comfort, for magnificence and display, or for whatever satisfaction the designer may seek under the circumstances. It is impossible to

* " We content ourselves, only too usually, in art, with the externals of a foreign style, and are satisfied, if we can say, ' that is Greek,' ' that is Gothic,' although without doubt, if a Greek artist, or one from the Middle Ages, should rise from the dead, he would shake his head doubtfully at our doings. He would probably say to us: ' It does not matter *what* we have made, but *how* we have made it.' "

Translated from Lothar Abel's *Gartenarchitektur*, 1876, p. 15, quoting Jakob Falke.

† For a discussion of materials as motiving style in the arts, see Gottfried Semper's *Der Stil in der technischen und tektonischen Künsten*, or Prinzhorn's dissertation upon Semper's work.

say in all cases just what features of a landscape design are traceable to the environment, what to the people, what to conscious purpose. All matters of expression of the people by their work, conscious or unconscious, are in large part their previous environment showing itself in their expressed ideas; and much of the environment of civilized men is of their own making and so itself the expression of the people. We can say, however, that all the different varieties of landscape designs owe their existence, and difference, to environment, people, and their resultant, purpose; and as these factors vary in combination, so will the designs vary. Now these factors in various definite combinations have at certain places and certain times in history been the same over some period of time and over some considerable area: many gardens, for instance, have been constructed in this way under more or less identical general conditions. These identical conditions have produced a similarity of expression in these gardens, which makes us recognize them as a class, and this common expression in its more notable manifestations we call "historic style." Such a style need not be conscious; it may exceptionally arise through a number of the same kind of people working under the same general conditions without very definite knowledge of each other's work and without intentional expression of anything but their individual desires. Some styles may exist, in various degrees of distinctness and perfection, which are of little interest to us as designers. Many styles, too, must have arisen in the past and been forgotten with the monuments in which they were recorded, — there was doubtless an Aztec style of landscape design and perhaps a Carthaginian style; but those styles which we call "historic" are those with which we are familiar.

Humanized and Naturalistic Styles

A work of art which has style may be esthetically organized in either one of two fundamentally different ways. The artist may design his work to express his own ideas, to serve his own uses, to show his own control over some of the materials and forces of nature. Or on the other hand he may design his work to express to the beholders the understanding which he has of some modes of nature's organization, and the pleasure which he finds in them. In the first case, the esthetic success of the work will require that the hand and the will of man be visible in it; in the second case, the higher art would be that which



Drawing by Hubert G. Ripley

GRAVETYE MANOR



so perfectly interpreted nature's character that the work should seem to be a wonderfully complete and intelligible expression of nature's self.

In these designs of man which imitate — or better, interpret — nature, there will be two kinds of unity sought by the designer. He will seek, as he does in his man-made designs, esthetic compositional harmony of form and color and arrangement, but he will seek also to express his ideal of a much more subtle harmony, namely, the landscape character which in large measure is not observed directly in the forms or in the composition, but is seen only in the light of some knowledge of the great natural forces at work, the growth of trees, the wave-carving of the beaches, the upheaval of the hills.

Interpretation of Landscape Character

In natural landscape, this character is the result of infinitely greater and more complicated reactions of forces than those which shape the works of man. These forces operate on so vast a scale and through such great stretches of time that the particular manifestations which we now observe are never the perfect expression of a combination of forces working all towards one obvious end. The river valley has been first upheaved and then eroded; the mountain slope has been forest-clad, stripped by an avalanche, again forest-clad, and again perhaps denuded by fire. In his own small work man may express his ideal of what might be the result if nature deigned to coördinate her forces for so small an end as man's esthetic pleasure. But when man deals with larger works of nature, all he can do, all he should dare attempt, is humbly to study the character and effect of the landscape as he finds it and to remove such things as he may which are incongruous with this expression and add such things as he can which will carry it to a greater completeness.

CHAPTER IV

STYLES OF LANDSCAPE DESIGN

ORIGIN AND NAMES OF HISTORIC STYLES — CATEGORIES OF STYLES — EXAMPLES OF HISTORIC STYLES OF LANDSCAPE DESIGN — The Moorish style in Spain — The Moghul style in India — The styles of the Italian Renaissance and Baroque villas — The style of Le Nôtre — The Romantic landscape style — The English formal style of the Tudors — The English cottage style — The New England colonial style — The modern German formal style — The Japanese styles — The modern American landscape style — STUDY OF STYLES — CHOICE OF STYLE.

Origin and Names of Historic Styles

In studying existing works of landscape architecture we find that we may consider in groups works which produce a similar effect on the beholder on account of a fundamental similarity in their organization; and we have seen that the similarity of organization comes in the case of each group from a similarity of conditions under which the examples in the group were brought forth, — conditions, namely, of their physical environment and material, of the people who made them or for whom they were made, and of the purposes for which they were produced. Although sometimes one of these factors, sometimes another, appears as most strikingly characteristic in the resultant groups, we find that the various historic styles of landscape design which have been differentiated have taken their names usually from the peoples which originated them and the countries in which they arose, occasionally from an individual whose name was associated with certain definite pieces of work which were the first examples of the style, and, rarely, from the total esthetic effect produced by the style. Naturally enough, most of our names of historic styles designate at once both the people and the country associated with their origin; for example, we speak loosely of an Italian style of landscape design. But since the ideals and customs of a people change with time, and since in different parts even of one country the natural conditions may be very different, if we intend to

designate a style accurately, we must name also its period and perhaps its definite location: we must say, for instance, the style of the Florentine Renaissance gardens. Equally definite with the name of the period and country — seventeenth century French style, for instance — is the name of the designer or his client, as Le Nôtre or Louis XIV. The style of Le Nôtre was also called the Grand style, that is, it was designated by its esthetic effect upon the beholder. Another style, esthetically almost its antithesis, also bears the name of an esthetic effect, the Romantic landscape style. As is natural, since the esthetic effect varies with the beholder, these names are of themselves less exact, and they come to have a definite signification only as custom sanctions their use in relation to certain recognizably characterized groups of designs.

Categories of Styles

Several styles of landscape design different enough to bear different specific names may yet be similar enough in some respects to be put in the same category in discussion. From the point of view of esthetic effect upon the observer, styles have been grouped into the two divergent categories, Classic and Romantic. Any style might be considered as Classic which was characterized fundamentally by repose, restraint, refinement, formality, although the name is more specifically applied, as it is in architecture, to the work of ancient Greece and Rome, which was marked by these characteristics. The word often connotes also an accepted standard, since the styles of Greece and Rome were so long thus regarded, but this is plainly not an essential meaning of the word. In contradistinction to Classic is the word Romantic,* as applied to those styles which excite the sentiments and fancy by variety and contrast and make a direct and studied appeal to the emotions, through the human associations aroused.

From the point of view of the form and space relation of the objects in the design, styles have been divided into the two categories which have been the innocent cause of so much discussion and misapprehension: formal and informal. The reason that these terms have occupied so important a place in the discussion of styles in landscape design is that they are the names of modes of organization so general that almost all other styles may be included under the one or the other. We hear so much about them, not because they are such valuable categories, but

* Cf. the two kinds of effects, discussed in Chapter VI, p. 77.

because they are such inclusive categories. Plainly they may divide the world between them. A formal design is one in which the objects are arranged in geometrical relations, their forms defining geometric figures on plan or being exactly balanced about a central axis. Such a design has been variously called architectural, regular, symmetrical, and geometrical. An informal design is one in which the objects are not arranged in the way we have just stated, that is, it is any design which is not formal. (Compare Plate 30 and Drawing II, opp. p. 30.) Most of the difficulties in regard to the term informal have arisen because different men have understood it in different senses. Some of the more ardent disciples of formal design have in effect considered informal to be synonymous with formless, and have denied that any good design could exist where, as they considered, there was no consistent organization of any kind. Others, having observed that the works of nature are without geometrical form, have endeavored to make their designs appear natural by the simple expedient of allowing no geometrical forms or balanced relations to appear.* The thoroughly unorganized and bad work produced in this way has been used as a reproach to those who were doing good naturalistic work, that is, design which, not being organized to express man's will, nor to express his esthetic desire for recognizable form and symmetrical balance, was informal, but was none the less composed, depending on more occult relations of balance and harmony and organized as an expression of the unity of certain forces of nature. It is evident that the negative term informal is so general that it is of very little value in naming a style, and should certainly not be used as the designation of the principle of organization of naturalistic design.

From the point of view of the fundamental ideal expressed by the designer, styles of landscape design fall into two classes, those which express the dominance and the will of man and those which express the designer's appreciation of the power and beauty of nature.† (Compare Drawing IX, opp. p. 78 with Plate 21, and Tailpiece on p. 230 with Plate 27.) We have called the styles which fall into the first of these categories humanized and those which fall into the second, naturalistic. Since giving an object geometrical form is a common

* Cf. footnote on p. 45.

† See Chapter III, p. 30.

and obvious way of making it express man's will, the term formal has often been used in the sense of man-made or man-dominated, but the two terms are not synonymous, for there are many informal designs which nevertheless are definitely and obviously humanized. The arrangement of their parts will consist in a more subtle sequence and an occult balance of interest among the objects composed, in pleasant harmonies and contrasts of the natural character of these objects, and in studied compositions of their individual effects for the greatest result in the effect of the whole. The hand of the designer and his artistic achievement may be recognized as fully in this design as in man's formally arranged compositions. (See Plate 6.)

Examples of Historic Styles

From among the various styles of landscape design, we have chosen for discussion in this chapter several of the more clearly defined as examples. Some analysis of the causes which brought each style about, some appreciation of the particular esthetic effect which is the stamp and the soul of each style, should give us a clearer idea of how our predecessors in landscape design have met their problems and what the essential considerations are which we in our turn must bear in mind in meeting ours.

The Moorish Style in Spain

The Moorish gardens in Spain had for their direct prototype the gardens of Persia and Syria. The first Moorish gardens in Cordova may well have been laid out by men who remembered the gardens of Damascus, and some of the fruits and flowers which to us are almost typical of Spain were introduced from the East by the Moorish invaders. In the hot and dry climate of southern Spain, the Moors had no need greatly to change their inherited method of life; and their social customs, and the constant wars, little and great, through which the country went, made it natural that the gardens should be almost in every instance *patios* partly or wholly surrounded by buildings, accessible only to the owner, and defended from the outside world. Of the many gardens which must have existed in Cordova, Toledo, Seville, and Granada, few have remained to the present day. Two notable and beautiful examples remain essentially unchanged in the gardens of the Alhambra and the Generaliffe at Granada. (See Drawing III, opp. p. 36.)

Shade and coolness were the things which the climate made most desirable. A love for the color and scent of flowers, the Moors had

brought with them from the East. Water, essential in any case for the growth of the vegetation, was also by its life and movement and sparkle, by its suggestion of coolness, by its very contrast with the outside world in a land of drought, the most precious and attractive thing with which they could decorate the small areas in which perforce they concentrated, to be enjoyed at ease, the kind of beauty and restfulness furnished so scantily by the outside world. The water appeared in brimming fountain basins, in long and narrow pools, in multitudes of slender jets, and in little runnels cut in the pavements of the courts and even of the buildings themselves. The fruit trees and flowers and fountains were necessarily made a part of an architectural scheme, and the style of the Moorish gardens is not separable nor essentially different except in material from the style of Moorish architecture of the same period. When the Moors were finally conquered by the more virile but less beauty-loving races of the North, their taste left its stamp on the culture of Spain, and the conquering Spaniard in Mexico and California left in turn monuments of his taste and customs, still in a similar climate, which serve as examples in these places to our civilization of the present day.

The Moghul Style in India

In the same way that the Arabs, having had previously no particular garden art of their own, prized and appropriated the garden design of the Persians and carried it to a new perfection in Spain, the Mongolian invaders of Persia appropriated the same art and carried it later with the founding of the Moghul dynasty in India to the greatest magnificence which it has seen. Thus the gardens of the Alhambra and those of the Taj Mahal (see Plate 1) have a readily traceable common ancestry.

The design of the Moghul gardens was based, as the design of any garden in a hot dry climate must be based, primarily on the value of water and shade and flowers and fruit. The arrangement of these was deeply influenced — both in the general division of the garden and in such things as the grouping of the trees and the number of waterfalls — by the Mohammedan symbolism which became gradually enriched from the traditions of the symbol-loving Hindus.* The Moghuls were

* Cf. the " marriage of the trees " and other symbolism alluded to in various chapters in C. M. Villiers Stuart's *Gardens of the Great Mughals*, 1913. (See REFERENCES.)



Drawing by Benjamin Y. Morrison

GARDEN POOL, THE GENERALIFFE



lovers of scenery and laid great emphasis on choice of site, a hillside spring being the ideal starting point of a garden. The gardens were inclosed, not in this case so much for the sake of defense as for privacy, repose, magnificence, and definite formality. The whole scheme of buildings and gardens was designed as one. The scheme was made to be lived in and often different portions were arranged for enjoyment at different times of day. We read how the Emperor moved from the water-sprayed central pavilion, cool even at noon, to the deep afternoon shade of a grove of planes, and again in the evening walked in the "moonlight court" full of the rich perfumes of gleaming white flowers. The gardens were often on a scale much greater than any of their prototypes in Persia, greater than the Italian villas of the sixteenth and seventeenth centuries with which they were contemporary, or indeed greater than any of the gardens with which we in modern times are familiar except the more magnificent designs of the age of Louis XIV.

These gardens came into being in one of two ways: either they surrounded the palace or temporary dwelling of the owner, or they were the result of the combination of two notable customs of the Moghuls, garden making and tomb building. It was common for any prince or noble to have constructed for himself a pleasure building in the midst of a garden and to use this for his own recreation and that of his friends during his lifetime, and for a tomb and a permanent memorial after his death. There thus grew up under the Moghul dominion in India a great number of these gardens, some of which have remained to the present day so that their design may be appreciated, and still more are in ruins with only traces of their plan. In the more broken and hilly country, the design fitted itself to the topography and therefore varied from place to place, although a certain consistency of scheme is traceable in such gardens as have come down to us. In these the main building was either at the bottom or the top of the terracing. As in the Moghul gardens of Kashmir, of which the Nishat Bagh is an existing example, advantage was taken of the change of elevation to secure by a succession of terraces a combination of inclosure with an opportunity for distant view. In the treatment of water any change of elevation was seized upon to give the additional life and splashing of cascades and water-chutes. In the great plains country around Agra and

Delhi, where less inspiration could be got from the sites, the designs were more nearly alike. In general the garden was inclosed in a rectangular form by high walls, its corners strengthened by towers. In the middle of each wall was often a great entrance gate. The principal building, commonly the pleasure house, stood in the midst of the garden, often surrounded by a canal and with four long water basins extending in a cross from the central pavilion and terminating against four features in the surrounding walls, — entrances or pavilions. The four rectangular plots thus formed between the water courses and the walls were further divided formally, and were sometimes planted in bold masses to brilliant flowers, sometimes set out with trees of different sorts. Though the design was simple and rigidly formal, much pains was apparently taken in the original planting of the gardens to avoid monotony, the different subdivisions often being given a different character by being devoted to the culture of some particular fruit tree or shade tree or flower. Often the principal flower display was confined to long beds running parallel with the paths which bordered the long water-basins, while the tree planting formed avenues paralleling the surrounding walls, or in the larger schemes formed considerable groves in which the tents of some of the followers of the monarch might be pitched when he visited the garden on a royal progress. Not much use could be made in these flat gardens of any form of cascade, nor apparently was much attention devoted to large fountains. Rather, as in the Moorish gardens in Spain, there were a multitude of small jets playing in the midst of the canals or pools or perhaps arching over from the stone coping into the pool. To give an effect of greater depth to the basins, which were usually shallow, they were often paved with blue tiles and further were diversified with the many-colored tiles which formed an important part of the decoration of the garden buildings. The copings of the pools, often beautifully carved, were so cut that the water could be held brimming to their upper surface, still below the level of the raised paths, thus giving both the greatest beauty of reflection and the practical advantage of greater ease of the use of the water throughout the gardens for irrigation. In this these gardens differed from those of Italy, — that though in both countries the use of the water from the point of view of beauty and enjoyment was

thoroughly worked out, in India its use in irrigation was a practical requirement as well, without which the garden could not have existed.

Of these tomb gardens of the plains the Taj Mahal at Agra, which by great good fortune has come down to our time in much of its former glory, is the finest example. In the Taj, Persian and Hindu craftsmen vied with each other in the decoration of a still essentially Persian architectural conception. Although the relation of the principal building to the four-parted garden is not typical, since the garden lies to one side of it, it thus takes advantage of a natural opportunity, standing with its terrace on the bank of the river Jumna and so dominating a sweeping view along the river and into the level country beyond. Arranged as it is, the garden gives a fitting setting for the central building, that miracle of architectural beauty the tomb of Mumtaz Mahal, the wife of Shah Jahan.

The Styles of the Italian Renaissance and Baroque Villas

The Italian Renaissance buildings and gardens — many of which are preserved to us as examples of this style at once so historically important and so adaptable to our present needs — were made by the independent and turbulent nobles of the country, proud, ostentatious, competitive, jealous of each other's success, but esthetically appreciative, often excellent artists in their own right, and in any case having command through riches or feudal power of the labor of great numbers of artisans and of the skill of a group of artists of greater attainment than the world has since seen. Practically throughout Italy, the plains and valleys are unpleasantly hot in summer and often unhealthful, while the steep-sided hills, even though they rise but a few hundred feet, are breezy and cool, and the outlying uplands of the higher country are well-watered. It was natural therefore that the villas of the nobles should be placed on these hills, facing a broad view and a cooling wind, and taking fullest advantage of the water which increased the luxuriance of the gardens and formed the chief feature of their decoration. The mode of life of these Italian princes was not very different from that of the nobles of ancient Rome, to whom they were often so proud to trace their ancestry. Traditions and records of the old Roman villas, indeed in some cases extensive remains of their former magnificence, served as inspiration for new work, as was the case in architecture and the other arts in the period of the Renaissance. Many statues and sculp-

tural decorations preserved from classical antiquity could actually be incorporated in the Renaissance designs. The great artists of the time were architects, sculptors, painters, landscape designers, as the occasion served. The villa was one design, including buildings and gardens, and so the evolution of style of the whole rise and flowering of the Italian Renaissance is reflected in its gardens just as it is in its architecture and painting. There were villas of importance and beauty at least as early as the time of Boccaccio*; of those which have come down to our time, sufficiently intact to give us any idea of their original state, part of the Villa Palmieri, the Villa Poggio a Cajano, Villa Castello, and Villa Petraia, in the vicinity of Florence, are among the earliest. In all these cases, there is a certain simplicity and solidity in the mass of the buildings, still close to their prototype of the fortress castle, or indeed often containing portions of these older buildings or being altered from them by the cutting of windows and doors in the old fortress walls. The building dominates a main terrace, simple in form and simply divided, and such other terraces and decorative units as there may have been were apparently related to the building in some direct and obvious mass relation motived by the ground rather than in any elaborate axial arrangement of the general scheme. The water appears in simple and quiet pools or in fountains notable for the excellence of their sculpture rather than for the play of fancy in handling the water. In the Villa Madama at Rome, also of an early date, we see evidences of transition to a general scheme in which the separate parts were subordinate to the unity of the whole.

The later villas, of the sixteenth century, of which some of the finest examples are the Villa Lante at Bagnaia (see Plate 29 and also 19), the Villa d' Este at Tivoli, the upper terrace at the Villa Farnese at Caprarola, and the Villa Medici at Rome, are more evidently the conscious application of architectural design to the outdoor setting of the palace. The various terraces and areas into which the scheme is divided are definitely related to each other as parts of a formal design, and important points in the design — terminations of axes and vistas or centers of symmetry — are recognized architecturally with statues or fountains

* The Introduction to the Third Day of the *Decameron* describes the garden identified as that of the present Villa Palmieri near Florence.



Drawing by Henry P. White

TERRACE STEPS, VILLA GARZONI (COLLODI)

or niches or other decorative treatment as the case may be. (See Drawing I, opp. p. 26, and Tailpiece on p. 23.) The treatment of water is carried to a great degree of ingenious and fanciful elaboration: water-ramps, water tables, cascades, fountains, and pools of all kinds interweave their sparkle and reflection with the masses of sun and shade into which the schemes are designed to fall.

In the villas built in the late sixteenth and the seventeenth centuries, the Baroque style was carried to at least as great extremes as it was in architecture, because the less necessity for any recognition of structural architectural requirements in garden design and the greater legitimate chance for an unrestricted play of fancy gave an exceptional opportunity to the exuberant designers of those times. Among the examples of work done in this period are the Villa Aldobrandini at Frascati, Isola Bella, Villa Giovio at Como, and the Villa Garzoni (Collodi). (See Drawing IV, opp. p. 40.) In these designs, a leading motive in the architecture seems to be to produce striking and picturesque forms, violent contrasts of detail and flat surface, — even at the sacrifice of delicacy and justness of individual form, — rather than to recognize the use and structural lines of the buildings; and in the smaller garden structures, the gates and steps and niches, this treatment of architectural forms as stage scenery to be looked at rather than anything to be used reaches its extreme. In some cases this treatment of each scene for itself alone is admirable; in other cases the illusion is so transparent that the attention is drawn rather to the incongruity of the scene with its surroundings than to the artistic completeness of the scene within itself.*

The period of the development of the Italian Renaissance and Baroque gardens covers roughly three centuries. During all this period, though men's ideas as to beauty in decoration changed, men's modes of living continued much the same, and from these and from the climate and vegetation have come essential characteristics which are found in nearly all the villas whether early or late. These are noticeably a feeling for the preciousness of water, expressed in the many ingenious means for displaying all its beauties; a feeling for the peace and relief of shade in a brilliant and sunny climate, and much

* Cf. Chapter VII, p. 117, Illusions.

skill in the use of shaded and sunny areas enhancing each other; a feeling for the inspiration of the open, distant view, and for the increasing of its effect by a foreground of shaded arcade or bosquet; a feeling for the unity of the whole villa and its contrast with the surrounding country, evinced by the definite wall between the gardens and the surrounding vineyards below, by the sharp contrast of the outside forest with the architectural terrace which it backs and enframes; a very notable feeling for formal design in outdoor objects, and with it the artistic sense not to carry schematic regularity of plan further than it is actually effective in the design, a mistake which besets us modern designers of the T-square and triangle.

It so happens that in the native vegetation of Italy there are a number of trees that are singularly well adapted to take their place in a formal design: the cypress, because of its symmetrical shape and heaviness and density of foliage, and the stone pine and the ilex for their equally definite and dense texture and for their striking character. (See again Drawing I, and also Drawing XIV, opp. p. 112.) Doubtless the choice of the designs was somewhat motived by the properties of these materials, but it is undeniable that the vegetation and the architecture of the Italian gardens form a complete and esthetically sufficient whole to a degree that can be matched in few other styles.

The Style of Le Nôtre

When Le Nôtre undertook the design of Versailles, after his successes at Vaux and Chantilly, the social conditions of France were in one respect similar to those in Italy which we have just discussed. The great nobles, each with his own estate and with command of great resources, vied with each other in magnificence and display; but where Italy was broken into a multitude of warring states, France was already a great nation; and it was the paramount magnificence of the King of France that Le Nôtre was called upon to express. In previous times the grounds about the French chateaux had been self-contained units as they were in Italy, for similar reasons; but at this time there was no necessity for inclosure for defense. Further, in the damp climate of France great areas of ground might be cultivated or grown to wood without prohibitive cost, and in the comparatively flat land in which most of the great gardens were situated, there was no better way of expressing grandeur than by the effect of almost unlimited extent. (See

Drawing IX, opp. p. 78.) There had been great open parterres before the days of Le Nôtre, there had been great gardens consisting of different treatments of rectangular units more or less intervisible, and Le Nôtre doubtless felt the barrenness of one and the confusion of the other. The method which he adopted to produce the desired effect of great extent was that of the allée through a wood, an arrangement not new to be sure, but never constructed before on so vast a scale. His system of allées at Versailles has the additional advantages of connecting various points of interest throughout the wood, giving a succession of different vistas as a visitor passes from one axially-placed fountain to another, and separating the different bosquets, each of which is thus allowed to be treated in a distinctive way. It is hard to imagine that any other scheme could have produced upon a flat topography so successful a combination of a multitude of subordinate different details and an enormous simplicity and spaciousness of general effect.

Next the garden façade of the chateau of Versailles, the great parterre serves as a setting for the building, a place for the display in open sunlight of the various decorative designs in bright-colored flowers, in which the people of the time were so much interested, and as a place in which might congregate the crowds of gay courtiers, who filled the gardens on state occasions and without whom these great open spaces were always incomplete.

The many different sculptors who designed the carved vases of the terraces, the cast bronze and marble statues of the pools and fountains, the busts and pedestals which adorn and define the allées, produced work which was in almost every instance excellent of its kind and appropriate to its place, and which goes far to give to the whole scheme an air of lavish expenditure but restrained and refined taste which is no small part of the total effect. (See Drawing V, opp. p. 44.)

Even with the great resources at the command of Louis XIV, it was impossible to keep a constant supply of running water for the fountains, particularly as the more important fountains, being in scale with the rest of the grandiose design, are in themselves very large and discharge an enormous amount of water. Moreover the land was essentially flat, and any display of water in such form as cascades was therefore particularly difficult. The arrangements of water which

Le Nôtre used most effectively at Versailles were the broad water mirrors of the upper terrace, the mile-long canal decorating the great axial vista, and permitting gay barges to be rowed about, and the separate fountain basins which, though they were more decorative when the water was playing, were still interesting when it was not.

In France there is no long-lived tree of a distinctive shape like the cypress, nor many trees of possible common use with so noticeable a character as the stone pine or ilex of Italy. In Le Nôtre's designs, the larger trees were used practically not at all as units in the design as the Italians sometimes used their cypresses, but rather as a canopy of shade, a mass of green, bounding the parterres and overarching the allées. Of smaller trees, like the bay and the orange in tubs, as in many Italian schemes, there was no lack (see Drawing X, opp. p. 80), and the great orangery at Versailles thus rendered necessary found convenient location under the south wing of the great terrace to which its arched entrances gave interest and architectural completeness.

Le Nôtre was called upon through nearly fifty years of professional activity to design and remodel a large number of gardens in France, — Vaux, Chantilly, St. Germain, Fontainebleau, St. Cloud and many which no longer remain, — and in other parts of Europe as well. He showed unusual ability in fitting his work to the site and in producing recognizably different effects in different designs, but the main conception on which his work was based was, throughout, the same as that which was manifested at Versailles, — a thorough appreciation of the grandeur which comes through sheer size, and ability to combine this effect with much local interest of detail, but also the courage to produce this effect even at the cost of some barrenness of extent of parterre and interminable stretch of vista.

All over Europe, too, the Grand style found ready imitators; and in less skillful hands than Le Nôtre's, formality on too small a scale became stiffness, straight allées on rolling topography were deprived of any meaning in design, sun-smitten parterres overpowered the buildings which faced upon them, or served as exhibitions of labored monstrosities of carpet bedding, or were intersected by enormously wide paths where there were never great enough crowds to give them sufficient reason for being.

The Grand style was taken over also into the field of city planning,



Drawing by Hubert G. Ripley

FOUNTAIN ON MAIN TERRACE, VERSAILLES

and the wide, straight, tree-planted avenues, the formal vistas, the star-shaped street-intersections, which came to their greatest use in the work of Haussmann, certainly trace much of their inspiration to the style of Le Nôtre.

The Romantic Landscape Style

In England, the Grand style appealed especially to those of the great land owners who were prominent in public life, familiar with the work in France, or employing French-trained gardeners, and desirous of themselves emulating this magnificence and ostentation. Some people of smaller means and more conservative tastes retained their gardens of the Tudor style, but many of the great estates were redesigned and much good work of an earlier time was destroyed to produce second-rate adaptations of the dignity of Versailles. But the very class of people who were so eager to run after the novelties offered by Italy and France were those who first tired of them. There was now gathering force throughout Europe the impatience of formalism and restriction and artificiality, which manifested itself early in literature in such diverse writings as those of Addison and Pope and later Thompson in England, and of Klopstock in Germany. In relation to landscape appreciation the first effect of this great general movement seems to have been an impatience of formal shapes and definite boundaries, and a groping appreciation that in the forms of Nature there was a freedom and inspiration that the man-imposed forms lacked. But Kent and the following landscape designers did not turn whole-heartedly to Nature herself for inspiration. Rather they studied the work of the few landscape painters that had then arisen, notably the work of Claude Lorrain, and endeavored to impose on their landscape designs the rules of a related but essentially different art. The reaction against formalism also had a simpler manifestation. Tired of geometrical shapes, the landscape gardeners introduced shapes which were not organized geometrically but which were unfortunately not organized in any other way, and so substituted, for the existing formal gardens, schemes which were not worthy to be called designs at all, since they expressed little more than the wayward fancy of those who perpetrated them.* This work,

* Cf. Repton's strictures on the "slovenly carelessness" of the reactionaries from formalism in *Sketches and Hints on Landscape Gardening*, 1794, Chapter VI, Of the Ancient Style of Gardening, — especially p. 44.

lacking the formal inspiration of the previous style and lacking also any sufficient inspiration of its own, soon palled even upon those who had first greeted it with enthusiasm. Novelty was secured by the introduction of Chinese pagodas and other oriental details to which the accounts of visitors to the East had turned the public attention, and by the fanciful buildings of the *ferme ornée*. (For a later French example, see Drawing XII, opp. p. 84.) And designers found again in the literature of the time a new impetus to an ideal which landscape design might strive to express.

In France, the Romantic movement had attained full expression in the works of J. J. Rousseau, and people, already familiar in literature with the conscious cultivation of emotions, were turning to Nature for some indefinable primal excellence not found in the works of man. The "*jardin anglais*," imported eagerly as a novelty and as a protest against formalism, acquired a new significance by the introduction of objects and the arrangement of scenes each with the express purpose of arousing a certain emotion in its observers. The particular phase of the "landscape school" thus accentuated spread rapidly on the continent and in England where it had had early beginnings in such a garden as Stowe.* This may well be called the Romantic landscape style. (See Plates 2 and 3.) Its designers seized upon and increased to the best of their abilities the natural characters which were at hand and were capable of producing such emotions as grandeur or desolation or melancholy; but in the great majority of cases the natural features within the limits of their designs were not capable of producing in their hands the striking emotional effects which they sought, and they had recourse to all sorts of expedients, which through associational appeal — usually through some human interest — were supposed to arouse the emotions desired. Weeping willows added their sentiment to the scene. Dead trees were set up, perhaps to increase the effect of wild naturalness as well as to stimulate a feeling of melancholy in their decay. Artificial ruins were constructed for the sake of a romantic human interest; even tombs of imaginary heroes or heroines were built, and appeals were made even more simply to the pleasures of the imagination by

* See *Stowe: a Description of the Magnificent House and Gardens*, with illustrations, of which the first edition appeared in 1744.

setting up inscriptions to different deities in different spots, and quotations from the works of various authors which were supposed to be in accordance with the scenes in which they were placed.* In England these excesses soon wore themselves out† and a more rational landscape style took its place in the work of Repton,‡ as it did in Germany in the work of Sckell and Pückler-Muskau.§ (See Plate 21.) In Germany, however, the Romantic landscape style came perhaps to its worst and most heavy-handed extreme. Some designs, as for instance, Wilhelmshöhe, near Cassel, are indisputably successful in producing an emotional effect, but whether this effect will be interest and excitement or sheer horror will depend on the sensitiveness of the observer.

The English Formal Style of the Tudors

When Henry VIII dispossessed the monks from their holdings in England, the new owners of the lands built houses and in many cases laid out gardens in accordance with the importance and state which they meant to keep up. There was a sudden and considerable increase in interest in the arrangement of landed estates. For a time at least there was little seeking outside of England for a new style of garden building; the work was done in accordance with the habits and taste of the owners, and with the materials of plant and stone that were found at hand. The soil of England is fertile, the climate moist and temperate, the sun more frequently hidden behind clouds or veiled in haze than shining with a brilliancy to make outdoor life unpleasant

* The inscriptions so used in M. de Girardin's estate, which he designed himself may be found in the *Promenade ou Itinéraire des Jardins d'Ermenonville*, with illustrations by Mérigot, 1788. See also the illustrations of Laborde's estate, Méréville, in his *Descriptions des Nouveaux Jardins de France*, 1808 —, plates 44–57.

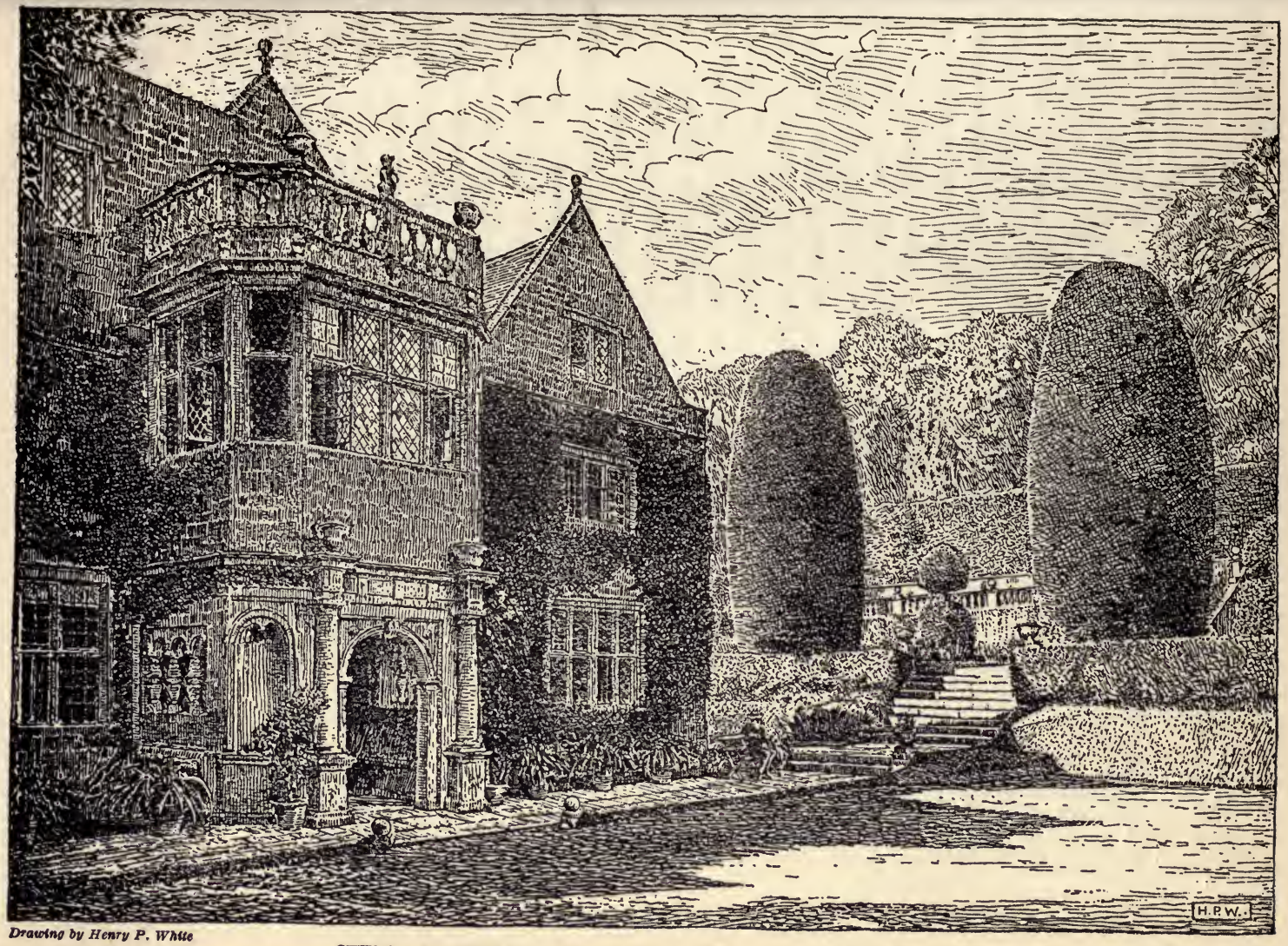
† Cf. the work of Whately, *Observations on Modern Gardening*, first published 1770. (See REFERENCES.)

‡ "I do not profess to follow either Le Nôtre or Brown, but selecting beauties from the style of each, to adopt so much of the grandeur of the former as may accord with a palace, and so much of the grace of the latter as may call forth the charms of natural landscape. Each has its proper situation; and good taste will make fashion subservient to good sense."

Repton, *Theory and Practice of Landscape Gardening*, 1805, p. 125. In Chapter X, Ancient and Modern Gardening. (See REFERENCES.)

§ Repton, Sckell, and Pückler-Muskau are important not only as designers but because of the considerable writings in which they left a record of their opinions.

except in the shade. The people, even the nobles, who built these gardens, were lovers of the outdoors and had a great deal of homely common-sense knowledge of the processes of agriculture and gardening. The laborers who actually did the work of construction and maintenance had been for generations on the same land. They were slow, conservative, and trained in definite and practical ways of doing their work. The designs of these estates were usually the work of the owners, helped it may be by some one of more trained taste, or realizing on their own land some memory of designs which they had seen in France and Italy, but in any case adapting their means to their ends with a very practical recognition of the influence of local material and individual use. Decorative flower beds they doubtless had in early days, and flowers against the walls of the houses and in protected places, grown for their sweet scent and for their bright colors in a dull atmosphere where bright color is particularly to be desired, and where the moisture is favorable to their luxuriant growth. The garden of sweet herbs, the garden of simples, was as often as not a part of the same scheme as the garden of flowers. The smooth texture of velvety turf with the shade of great free-standing trees gave beauty and dignity to their grass terraces and to the level expanses of bowling-greens and lawns for archery. There were pleached arbors and alleys for shady walks and for outdoor resting-places. The same workmanlike but fanciful use of the materials of stone and brick which give the buildings of the period much of their charm appeared also in the walls, steps, and balustrades of the gardens as, for instance, at Montacute House. Water in pools was used sometimes purely for decoration but more often served also the practical purpose of a fish pond. An old device was still common, the mount, whence a man might look not only over his own inclosed gardens but out across the countryside. The grounds were arranged for outdoor living and active use, and their designers drew no hard and fast line between such areas as might be considered as entirely decorative and such as were in part at least devoted to economic purposes. The separate areas immediately about the dwelling were for the most part formal, but the garden with its walks and hedges, the terrace with its curious knots of flowers, were designed each for itself, and there was little attempt at any relation of these areas in a general formal scheme



Drawing by Henry P. White

STEPS TO TERRACE, ST. CATHERINE'S COURT, SOMERSET



tending to one effect, except in so far as the separate areas lay one next another surrounding the house.

The Elizabethan pleasure garden * was an outgrowth of the earlier manner of English gardening, enriched by ideas from abroad, but still distinctly a national style, with its roots in its native soil.† But as the riches of the greater land-holders increased, as they became more familiar with the customs of other courts and with the growing splendor of the gardens of Italy and France, and the quaint conceits of the Dutch, imitations of the styles of these countries displaced on many estates the older English work. Later, as we have seen, the landscape school arose, destroyed much of the preceding work of whatever kind, produced the deadly monotony of "Capability" Brown, the puerilities of the later Romantic landscape work, and settled to the soberer sense of Repton. From Repton's time to within the last quarter century there has been little new landscape design in England worthy of much serious attention by a student of style; but within recent years there has been a revival of the studied planning of gardens truly English in expression ‡ which has produced work not widely different from that of Elizabethan times. This is largely of course because the modern designers are intentionally holding fast to that which has come down to them from the past, but partly, too, it is because the modern work is based, as was the old work, on the character of the people and of the country, and is continuing a tradition which, though overlaid from time to time with other styles, has persisted since before the Tudor times down to the present day. (See Drawing VI, opp. p. 48, and Drawing XX, opp. p. 158.)

The English Cottage Style

The cottages have had their gardens in England as surely as have the castles, and in the cottage gardens the natural conditions produced a similarity of appearance worthy of the name of a style more certainly than was the case in the larger gardens, because no seeking of novelty

* See the chapter on the Elizabethan garden in The Hon. Alicia Amherst's *A History of Gardening in England.* (See REFERENCES.)

† See, for instance, the views of Penshurst and Knole given in Macartney's *English Houses and Gardens in the XVIIth and XVIIIth Centuries.* (See REFERENCES.)

‡ See the work of Mr. Lutyens as illustrated in Lawrence Weaver's *The Houses and Gardens of E. L. Lutyens*, London, "Country Life," 1914.

for the sake of display, no transitory style of another country, interfered with the unconscious but definite working out of these forces. The makers of these cottage gardens were poor and forced to consider the practicality of everything they did. They were tenacious of tradition, home-loving, dwelling in the same holding for generation after generation, each man adding his little, as circumstances allowed, to what he received from his father and planned to leave to his son. The gardens were placed close about the houses to be easy of cultivation; they were small, hedged in, fitted to the topography, making careful use of local opportunities and local materials, often given over largely to the growth of vegetables, with the flowers perhaps lining their walks or filling in odd corners by the door of the house, and with roses and flowering vines covering the walls, the gate, and even clambering over the roof of the house itself. The choice of local material for the house as well as for the outlying walls, the use of thatch or thick and irregular slate on the roof, the closeness of adaptation of the house and its dependencies to the ground (see Drawing XXIV, opp. p. 192), which comes from gradual growth and the natural unwillingness of the poor man to undertake any avoidable excavation or construction, the rich enshrouding of ivy growing untouched for centuries, and the exuberance of hardy flowering plants, protected but not restrained, — all tend to make the typical English cottage with its garden almost in itself a natural object,* — something so largely the work of time and so little the conscious design of man as to be hard to imitate under other circumstances, but still an excellent source of inspiration to any one who is seeking to make a smaller building and its grounds and the surrounding landscape all parts of one composition. (See Drawing VII, opposite.)

The New England Colonial Style

Many of the early Pilgrims and Puritans left just such cottages and cottage gardens as we have been discussing when they came from the old England to the New. Their first permanent houses were as like those to which they were accustomed as it was possible for them to build from the somewhat unaccustomed materials at hand.

* See the illustrations in books on English cottages such as Ditchfield's *Picturesque English Cottages and their Doorway Gardens* (1905), Dawber and Davie's "Old Cottage" books for Cotswold, Kent, etc., published by Batsford, or *Old English Country Cottages*, edited by Charles Holme, published by "The Studio," 1906.



Drawing by A. B. LeBoutillier

COTTAGE ON THE THAMES

Shingles took the place of thatch, wooden construction throughout, since wood was so plenty, replaced the part stone construction of a land where wood was dear; but there are to-day a considerable number of English wooden cottages which might almost stand as models of the houses of the Pilgrims. Within a very few years, there were gardens around these houses in the new land; but although here there was ground enough, necessity for defense and economy of labor in cultivation of the none too fertile soil still kept the garden small and near the house and restricted the flowers to a few hardy plants, mostly serving also some medicinal or household use, in a border along the paths in a garden otherwise devoted to vegetables and fruit, or as a decoration of the front dooryard, — a bit of fragrance and color and a reminder of the old gardens whence their seed had been brought.

In later times when the prosperous merchants of Salem and Newburyport and Portsmouth and Boston built their houses which are still the much-copied examples of New England colonial architecture, their gardens did not depart far from the style of those their great grandfathers had built. (See Plate 5.) The white-painted wooden picket fence and the latticed vine arbors found their prototypes in the English gardens, though rarely were the English structures so refined in detail; the pear-tree bordered walks and the area of lawn and box-bordered flower beds and vegetable garden lying close together, or often indeed forming part of one simple design, were all what their owners still could see when they returned to the mother country; and the flowers, the trees, the box bushes had probably most of them come directly from England as did in the early days the bricks of the houses themselves. The colonial gardens of New England are different in style from the cottage gardens of England not because the owners had different ideals of design, but because their surroundings in the new world forced upon them a different choice of material and eventually a different method of life.*

The Modern German Formal Style

Previous to the very modern national consciousness of the German empire, there has been in Germany nothing which could fairly be called

* Cf. Grace Tabor's *Old-fashioned Gardening, a History and a Reconstruction*, in which Chapter V, Austere Puritan Gardens, treats this one of the five styles of American colonial gardens which she differentiates. (See REFERENCES.)

an independent historic style of landscape design, unless, perhaps, we should except the cottage gardens. Just as English cottages and their gardens had an unconscious similarity of form due to similar conditions, there is a recognizable similarity of construction, though to a less degree, among German cottages and gardens, and indeed some modern German designers are finding part of their present inspiration in this old work.* But the long-continued turbulence and destruction to which Germany has been subject has left to modern times but comparatively few examples of such prototypes. In larger designs, such recognizable style as there has been in Germany has been first the Dutch, then the style of Le Nôtre, then that of the "*Englischer Garten.*" In many cases these styles in Germany appeared in ill-considered imitations of their originals; but as disciples of the landscape school, Germany has shown in Hirschfeld, Sckell, and Prince Pückler von Muskau a conception of naturalistic design which worthily matched the work of Repton and Price, and largely inspired the naturalistic ideals of Petzold and of such a present-day writer as Camillo Karl Schneider.†

The modern German conscious seeking for national expression in every field has had its influence on German landscape architecture notably in the production of a formal style of landscape design, intentionally different from any style which has gone before. In many another style the artist has consciously adapted his means to his ends to express the ideal which seemed to him of most worth, but here for the first time landscape designers have gone deliberately to work to determine what their national ideal ought to be and then logically deduced what means should be employed for its attainment. To be sure, there is easily traceable a strong influence from English landscape designs,‡ but it has been accepted in general principle rather than adopted exactly in any part, and the result is certainly an independent

* For instance see Schultze-Naumburg's *Kulturarbeiten*, and the Introduction by J. A. Lux to *Volkstümliche Kunst, Ansichten von alten heimatlichen Bauformen, Land- und Bauernhäusern, Höfen, Gärten. . .* Photographisch aufgenommen von Martin Gerlach. (1904.)

† See his *Landschaftliche Gartengestaltung*, p. 4. (See REFERENCES.)

‡ Especially through the writings and designs of Hermann Muthesius. (See REFERENCES.)

style. The modern German formal landscape work seems to show, to the non-German, the weakness as well as the strength of its conception of design. In the smaller private places where the needs and the life of the owner can be definitely known, the adaptation of the different parts of the scheme each to its use, the arrangement of these parts for economic efficiency, is usually excellent, and where the designer has been blessed by nature with a sensitiveness to beauty of form, the proportions and arrangements of these parts are often consistent and beautiful. But especially in parks where the form of the design has been made to depend on its obvious and economic functions, with no consideration for the lightness of touch that comes from a certain waywardness, the result seems, esthetically, uninspired.

In decoration, particularly in the choice of statuary and similar features, indeed in all that part of landscape design where the choice of form is a matter of esthetic sensitiveness rather than economic adaptation, the modern German feeling that a German must be different from other men in his nature and in his needs has found an interesting expression. In the landscape work of the past, the modern designer has an infinity of examples of forms adapted by artists to the various needs of man, esthetic and economic, the results of centuries of experiment and refinement. When, as has been the case in some of the modern German work, a designer attempts to meet these same needs — for in effect they are the same throughout all time — by some conscious independent invention of his own, his work is likely to seem, as much of this German decorative work seems to most non-Germans — and to some of the Germans themselves — grotesque or childish or at best crude.

In another respect the Prussian cast of mind has impressed itself recognizably upon this new design. In private estates, in parks large and small, in other public designs, and recently in cemeteries, the Prussian impatience of anything indefinite and not to be accurately codified has produced a leaning to formality of design to the exclusion of other possible solutions of some of the problems. This formality has been the more insisted on in the smaller private places, because it lends itself to the typical German care and method of up-keep, and because, in the usual rectangular lot, such an arrangement is the least wasteful of land,

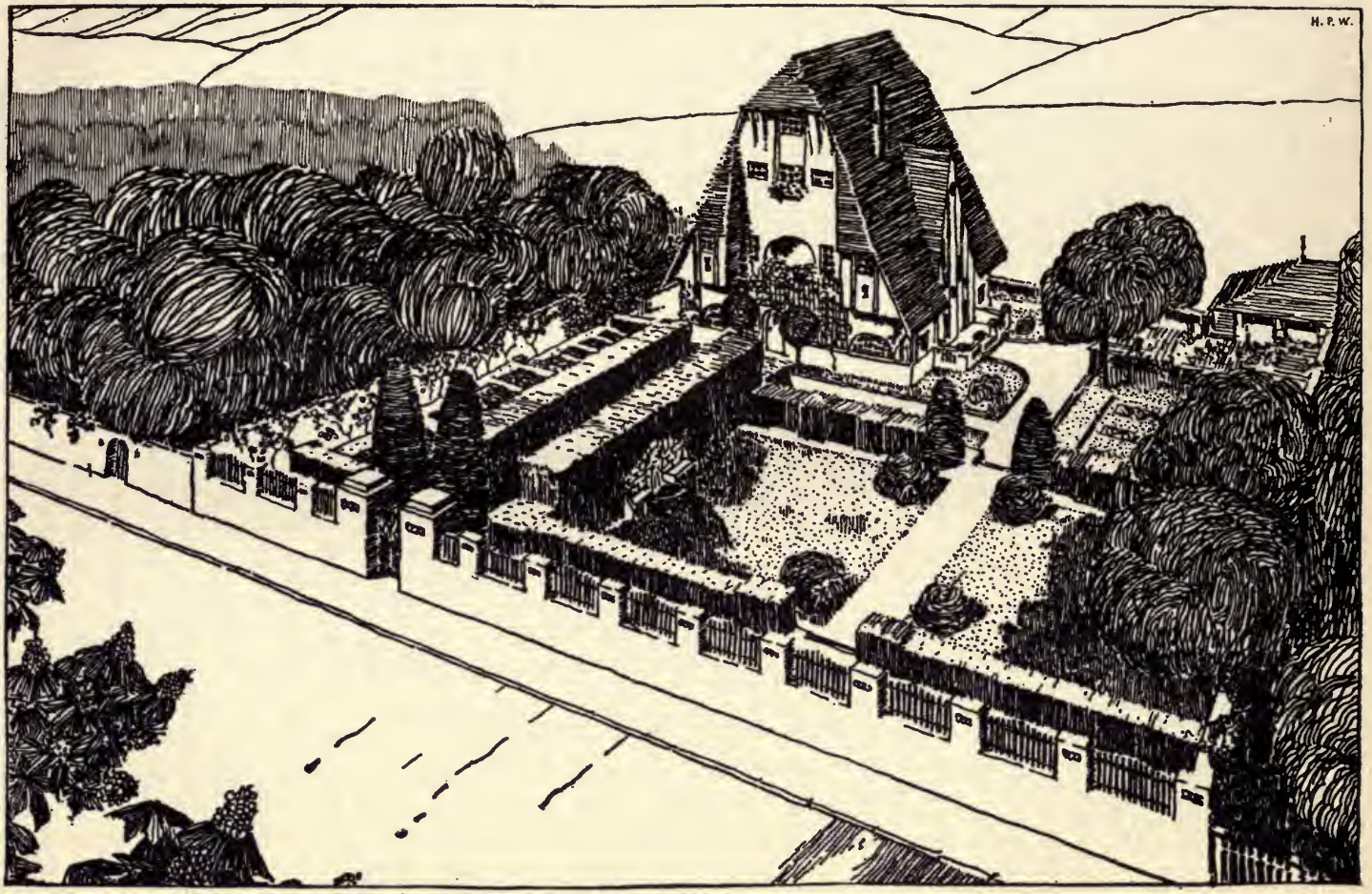
and because the national habit of sitting outdoors and eating and drinking in a leisurely way makes of the grounds about a house a number of outdoor rooms actually much used, for which use the rectangular forms are the more convenient. And there is a very just feeling among German designers, helped doubtless by this use of the grounds, that the house and its surroundings are all part of one architectural scheme and should be so treated for esthetic as well as economic reasons. (See Drawing VIII, opposite.) The considerable amount of garden architecture and garden furniture required — shelters and arbors, seats and tables — makes more necessary and more easy the architectural treatment of the ground. The national habit of congregating of an evening in some quiet and orderly concert-garden or beer-garden has produced a multitude of these places, the design of which, for practical reasons, is almost invariably formal. All these considerations have probably had their effect on the design of the German park. Those parks which serve the purpose of playgrounds are, in fitness to their use, formal; but some of the much larger parks, which in this country would be treated naturalistically, still are affairs of open level turf or gravel and straight lines of equi-spaced trees, usually without any attempt to make this formality tell for grandeur as in the French formal style, but being rather an economic fitting of each area to its use and up-keep, and an arrangement of all the available area of ground so that nothing may be wasted. The fact that the topography of these formal parks is often flat has evidently also been a contributing cause to this formality.

As in the case of another self-conscious expression, the Romantic landscape style, this German formalism has been accompanied by propagandist literature, of which Leberecht Migge in his early book *Gartenkultur des XX. Jahrhunderts* (1913),* is an advanced exemplar. What is to be the future of the *Gartenkultur* and *Gartentypen* which he so earnestly recommends for Germany, and apparently also for the rest of the world, will depend, however, on their fitness in use, on their adaptability to the actual needs of men.

The Japanese Styles

Arising many centuries earlier than the landscape school of Western Europe and under a quite different civilization, the styles of Japanese landscape design nevertheless have something in common with the

* See REFERENCES.



Redrawn by Henry P. White from Die Woche, "Hausgärten," *published by A. Scherl*

GARTEN AM MÜGGELSEE



Romantic landscape style which we have already discussed. In both styles designers found an inspiration in Nature which they used in a conventional way in design; in both styles the separate scenes of a design are unified by the emotional effects which they were intended to produce; but whereas the western Romantic landscape style was a sudden unreasoning outburst of revolt against previous repression, which arose, ran to absurdity, and died down within less than a century, the Japanese styles are the expression of a racial feeling and reverence for Nature, wrought out, conventionalized, and symbolized through a period of over a thousand years, by successive generations of artists, who, unlike the designers of the Romantic style, produced almost invariably symbols of intrinsically beautiful form. (See Plate 4.)

In the best of the Japanese gardens, every natural beauty large and small of the sites occupied has been made use of and increased. Any harmonious outside views which could possibly be developed have been recognized, enframed, and made a part of the picture of the garden. The garden itself is thoroughly screened, when its size makes this possible, from the intrusion of anything out of scale or inharmonious in association with the purpose of the design. Where the scale of the design warrants it and equally where a careful diminution of scale makes it possible, the gardens are often adaptations and imitations of scenes in Nature; but they are almost never indiscriminate copies. They are representations of a chosen expression of Nature, a chosen effect, and everything in the design is carefully studied to coöperate in this effect. Through centuries of studied appreciation, the ordinary forms used in garden design, as in the other arts in Japan, have become largely conventionalized. Trees and shrubs have been pruned into shapes not natural but supposed to represent more typically the character of the particular plants. There is a conventional relation of plants to water or stones or lanterns. Certain arrangements of stones represent a brook; certain light-colored stones represent a waterfall, being set and enframed as a waterfall might be; a level area covered with white sand represents a sheet of water; certain shapes and arrangements of stones represent a mountain. Many forms are used, too, in a purely symbolic way, representing and suggesting certain emotions supposed to be proper

to certain places and occasions, and so on through a range of symbolism, not all of which would be apparent to an untrained European eye, nor even, indeed, to the eyes of many of the modern Japanese. This symbolic use of objects as representing larger natural forms and as suggesting certain emotional effects has enabled the Japanese to compose on a miniature piece of ground a suggestion of a large natural landscape. In these miniature compositions it is of course not for a moment supposed that the design is an imitation of its natural prototype, but rather that, as in a stanza of poetry, the forms used should be in themselves beautiful, their arrangement in composition should be pleasing, their significance should be worthy, and the sequence of associations aroused by their symbolism should be harmonious.

The points of view from which the various compositions are to be seen, especially from the principal rooms of the house, the sequence in which the various views are to be presented to the visitor, are carefully considered and carefully designated in the design of the garden, — certain shelters, certain stones, certain bridges, certain lanterns, being placed in certain definitely related positions; and these arrangements are to a considerable extent a matter of convention and symbolism, though in their actual physical arrangement at the hands of the designer they are seldom twice alike.

These compositions have usually been closely studied in relation to the topography and to the life, means, and tastes of the owner, the artist endeavoring to choose a conception for his design which should be thoroughly appropriate in every way, and then to carry out this conception, however humble, to its fullest realization. To the Japanese, trained as they have been, almost without exception, to appreciate the beauty of an arrangement of a few precious objects on the tokonoma in their houses, accustomed to seeing infinite pains taken in the arrangement of a single sprig of blossoming cherry in a vase, there has seemed little difference in the degree of artistic achievement between the tiny garden of the poor man and the no more perfectly designed property of the prince. There are three degrees of finish in which a design may be carried out, the bold or rough, the intermediate, and the finished or highly-wrought. Whichever kind of finish is chosen is carefully adhered to throughout the design. Whatever type of garden — landscape or

level or court or tea-room * — circumstances or taste may have dictated, its own symbols and conventions are followed by the designer.

The Modern American Landscape Style

Prior to 1850,† there was comparatively little landscape design of any kind in the United States. In the settled communities of our Eastern coast, there were small gardens, mostly in the style of the part of Europe from which their owners had come,‡ and there were also some large private estates almost always in the English landscape manner or some adaptation of it to our conditions; in California there were the gardens of the Spanish missions. With these exceptions, there was no definite mode of landscape treatment to be found in the country, worthy to be called a style.

With the tremendous growth of our cities and the industrial development of the whole country, there came an increase of wealth and the rise of a whole class of people who could afford to own a country estate, while doing business regularly or occasionally in the city. Also there was an enormous increase in the number of people who, while daily workers in the city, were still able to own and enjoy a small piece of land in the suburbs. And further, the civic problem arose of the well-being of the hundreds of thousands of people, who, having flocked to the cities for employment, were unable of themselves to obtain the rest and refreshment in open surroundings which the oppression of their work and life in the city was making increasingly necessary. There was thus a very real and pressing demand for the utilization of the landscape by man, not for an economic use, not primarily to delight him with beautiful compositions of form and color, but to serve as a relief, an antidote to the too great insistence of his own affairs and his own constructions.§ In response to this demand came the work of Olmsted and Vaux, and H. W. S. Cleveland, Charles Eliot and many others;

* This subdivision is taken from an unpublished manuscript by Takekatzu Uenoru Takata of Kioto (secured for the Harvard School of Landscape Architecture by B. Y. Morrison, Sheldon Travelling Fellow), written in English in 1893, apparently without the author's knowing of Conder's work published the same year.

† Note the work of Andrew Jackson Downing. His editorials in the *Horticulturist* on the need for public parks appeared in 1848–1849.

‡ Cf. the reference to Grace Tabor's *Old-fashioned Gardening*, given in footnote on p. 51.

§ Cf. Chapter I, p. 1 and Chapter V, p. 75.

and of these much the best known is Frederick Law Olmsted, Sr., on account of his work with Calvert Vaux on Central Park, his work on a long succession of parks and estates from 1853 to 1895, and his writings (now in course of publication. See REFERENCES).

In its treatment of parks and large private estates,* this American style of landscape design traces its origin directly to the English landscape school, but in the American work the designers sought with much more appreciation the preservation and interpretation of natural character. The English designers had desired to express the magnificence and taste of the owner in a composition of natural ground forms and trees modeled after the beautiful English countryside, rather than to suggest the freedom of little-humanized Nature in which a man might lose his consciousness of self. The choice of indigenous plant material, the study of the arrangement of this material in accordance with its own character and of that in the landscape in which it appeared, is therefore an important consideration in this American style. The landscape characters, however, the "natural" landscape scenes, which this style usually seized upon to enhance and reproduce, are seldom the unhampered work of nature; more usually they are the scenes of pasture and woodlot, shrub-grown wall, and elm-dotted river bottom, which are partly the results of man's activity in the less intensively-used farm land. This mode of treatment of the landscape on large areas has not only the esthetic advantage which has been pointed out, but also the economic advantage that thus it may make use of much existing beauty of land-form and vegetation, and thus it can be consistent with land lying beyond its boundaries and so give a still greater sense of freedom and extent.† (See series of views of Franklin Park, Boston, Plates 31 to 35, and plan, Drawing XXXV, opp. p. 298.)

In the smaller suburban places, where the buildings are visible if not dominant and where it is quite impossible to produce exactly the effect of a free landscape, this style takes on itself a somewhat different manifestation. Even in the compass of an area of half an acre, there may be an open irregular lawn surrounded by promontories and bays

* For a detailed discussion of the design of American estates and landscape parks, see Chapter XI.

† As in the English landscape style. "Appropriation" was one of Repton's cardinal principles. Cf. footnote on p. 267.

of planting and broken by two or three free-standing trees. (See Plate 6.) Such an arrangement need make no attempt to imitate the natural forms which have inspired it. It may be obviously man-made and may contain arrangements of plants and flowers not native, but the design may still suggest free landscape by the natural character of the plant material and its informal arrangement, and may still thus in its small compass be a more restful thing to its suburban owner than any purely formal design might be.* In small lots of irregular shape this informal design has an additional advantage, namely, that it is possible to subdivide the area into the necessary functional units and to group them with the least possible waste of space, thereby leaving the maximum space for such uses as, for instance, a lawn which gives by its open area some sense of extent to the design.

From the nature of the case this work on small properties, usually with no possibility of great expense for a trained designer, has fallen often into unskilled hands, and what should have been suggestion of natural beauty has degenerated into meaningless undulations of shrub beds and meanderings of paths very similar to unfortunate examples of the landscape style in Europe. When designed and maintained by persons of taste, however, this style, even in a very small area, can be treated in a way not essentially different from the symbolic work of the Japanese, and it can be, in the same way, a work of art.

Study of Styles

The modern landscape architect has in the examples of the styles of the past a treasury of inspiration and information to aid him in his present work; but he should study these styles not as an archæologist, not as a copyist, but as a workman providing himself with tools for future original use. He should endeavor to see how in each case the designer met a particular and individual problem; he should feel a brotherly and human interest in the way his predecessor has adapted means to ends; and he should thus get from an example in any style some inspiration for his own work, however different its circumstances may be. More specifically he studies each style to determine the essential effects of each; to learn what esthetic ideas may best be expressed through the medium of its typical forms; and he familiarizes

* See the article by F. L. Olmsted, Sr., in *Johnson's Universal Cyclopædia*, under the heading Landscape Gardening, 1st (1876) and later editions.

himself with the typical forms occurring in each style and considers how these forms will serve and express the economic uses of his own designs.

Choice of Style

In studying styles which we may wish to adapt to our own needs, we should therefore try to discover their creating factors, that is, we should study the history and characteristics of the people who originated them, their purposes, the surroundings in which the work was done, and the various materials used, because if these conditions are not paralleled in new work after that style, the work is apt to be both incongruous and inconvenient. Indeed, the very perfection of a design meeting one set of conditions, may make it unfit for other conditions, and hard to change in parts without destroying the unity of the whole.

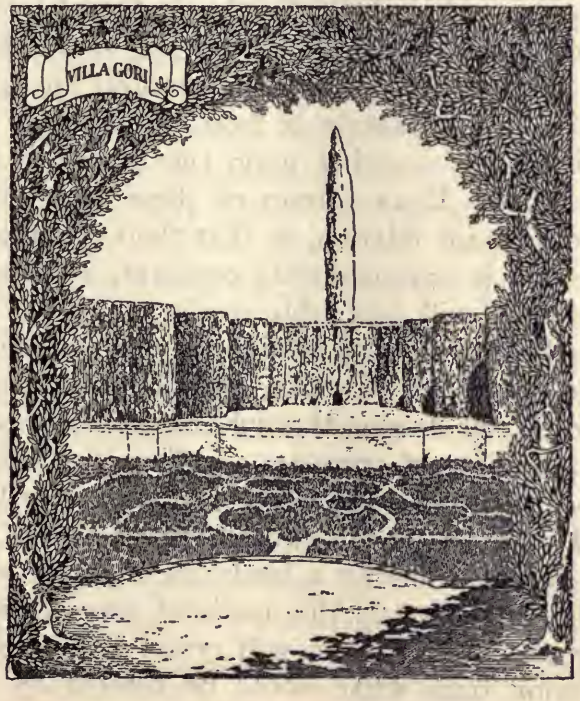
In the matter of suitability of a design in a certain style to its landscape surroundings, it is hardly possible to draw any general conclusions. An Italian villa is definitely separated from the country about it, an English landscape scheme blends into its surroundings by imperceptible degrees. Whether in a new case harmony or contrast would be more desirable, only a study of the individual new problem will tell. In matters of association, however, the harmony or contrast of a certain style with its surroundings is reasonably predictable. A perfect copy of an Italian villa set down upon a New England hillside would probably seem, at least to any one familiar with Italy, incongruous, purely through the tremendous difference in association between the scheme and the surrounding landscape, but if an Italian scheme without essential difference of organization were worked out in New England in local material and planted with local trees, no particular associational incongruity might result. The great variety of climate, topography, and plant materials and the different nationalities which have contributed to our population suggest to us a wide range of inspiration from the styles of other countries.

Practical considerations of construction and upkeep will of course play an important part in determining the choice of style. A style which depends for its beauty on delicate detail and elaborate ornament cannot be adapted to an inexpensive scheme. A style which, although in its original it bears such detail, depends for its essential effect on boldness and solidity of mass, may perhaps be successfully translated

into a coarser and cheaper material. Where no particular esthetic appreciation may be expected in those charged with the upkeep of a design, as for instance in some parks, an obvious formal scheme may succeed, because for instance a dead tree in a row will be noticed and replaced, whereas in the occult balance of an informal scheme a missing tree may be replaced by another of different effect or not replaced at all.

One value which a style may have when used or adapted in new surroundings depends upon the familiarity of the observer with the style in its native place. An arrangement of an American country place which suggests an English pastoral landscape has to a man familiar with England an added delight, because it calls to his mind additional remembered beauties; and the recent designs of estates inspired by Italian examples * hold for lovers of Italy a pleasure and a unity through association which is no small part of their charm.

* Cf. the work of Mr. Platt as illustrated in *Monograph of the Work of Charles A. Platt*, with an Introduction by Royal Cortissoz, 1913.



CHAPTER V

LANDSCAPE CHARACTERS

THE PHYSICAL ORIGIN OF LANDSCAPE CHARACTERS — CHARACTERS AS PARALLEL TO STYLES — EXAMPLES OF LANDSCAPE CHARACTERS — The prairie — The barren or tundra — Sand dunes — The Sequoia grove — The Sierra mountain meadow — The bushy pasture — English pastoral landscape — DESIGN IN LANDSCAPE CHARACTERS — Landscape characters in relation to economic use and maintenance — VALUE AND PRESERVATION OF CHARACTERISTIC SCENERY — Man's need of free landscape.

If a natural feature, or area of the earth's surface, is felt to be esthetically unified, if there is a naturally-produced harmony among its parts, we may say that this natural unit has character, just as we say of a man-made object, esthetically unified, that it has style.

The Physical Origin of Landscape Characters

All natural features are produced by natural forces — gravitation, the flow of water, the expansion of frost, the force of the winds, the power of plant growth — acting upon the materials which compose and clothe the earth. If any group of these forces remain for long enough in some constant relation, so that their effect on the materials in a particular case is approximately constant, a harmony of characteristics, a character, will inevitably result, which can be esthetically perceived in the landscape, even though the observer has no knowledge of what forces produced it. (See Frontispiece.) For example, a stream of a certain size flowing through material of a certain kind will produce after a number of centuries a valley of a definite shape. If the expression of the force of the stream as shown forth by this valley is not confused by some other manifestation of nature's activity, such as a filling up of the valley by a landslide, then the valley will have character, and this character, this mode of organization, will be felt esthetically by the beholder. It will create in his mind a different esthetic impression from what would be created by another valley

which had been brought about by any considerably different combination of forces and materials. Whether or not this valley is called compositionally beautiful will depend on the completeness of the approach to esthetic unity of its characteristics. Beauty will be rendered more likely by the order produced by a clear unblurred expression of natural forces, but beauty does not inevitably arise from such an expression.

Characters as Parallel to Styles

There is of course an infinite number of different valleys, as there is of gardens. The differences between one valley and another and between one garden and another are often so small that they cannot profitably be referred to respectively as differences of character or differences of style. On the other hand, there are typical kinds of valleys (compare Plates 22 and 23), just as there are typical kinds of gardens, dependent in each case on typical constant modes of organization; and valleys or gardens which are made in some particular typical way and approximate to the resulting typical characteristics may be spoken of as being of this particular character, or style, as the case may be.* Just as we agree to designate as historic styles those styles which have arisen at different times in history, through similarity of man's action under similar circumstances, so, when at different points on the earth's surface the natural forces come to be correlated in a similar way, working on similar material, their results are sufficiently similar so that we may say that they have the same landscape character. This similarity of the character of one unified landscape to that of another exists, as we have said, in all degrees, and, just as with historic styles, only a few of these instances of similarity have interested man enough so that he has given them specific names. Indeed it is a cause of great difficulty in discussing natural character that there are many important characters which we can perfectly recognize through their esthetic expression, but for which we have no definite names. And furthermore, the names which we do have to designate different landscape characters are used primarily for another purpose: they are usually names of shapes or occasionally names of materials. So, if we wish to name specifically a landscape character, we are almost always driven to use a cumbersome phrase, just as we must usually do in designating styles, defining it by association, or connection, rather than

* Compare landscape characters and historic styles.

by its esthetic essence. We say, for example, Florentine Renaissance garden, and Alpine glaciated valley, — the name used in each of these cases being the name of the example in which the style or character reaches its most complete expression. A few examples of natural characters, from the infinity of possibilities, may make it plainer both that these characters are essentially different, and that this difference is the different expression of the natural forces which have produced them.

Examples of Landscape Characters

The Prairie

The simplest and, largely for this reason, some of the most striking landscape characters are those which depend on the simplest ground form, the plain. The prairie is of all landscapes the most unchanging in its form. Its level surface offers no point of attack to the erosion of water, and, protected by its matted sod, it is safe also from the power of the wind. As the prairie was when the white man came, so it had been through ages which have witnessed enormous changes in all the mountains and river valleys of the continent.

The sea alone, or a great lake, can vie with the prairie in the overwhelming simplicity of its effect. Extent, vastness, are alike in prairie and sea, but while the sea is always alive, even if at times asleep, the prairie is dead. It is immovable, ponderous, monotonous, stupefying. Each slight undulation which bounds the view gives promise of something different beyond, a promise always unfulfilled as one swell of ground succeeds another through days of travel.* But nowhere better than on a prairie are to be seen the glories of the powers of the air. The squadrons of towering white cumulus clouds, giving in their diminishing perspective even a vaster sweep of view than the land, the daily miracles of sunset and sunrise, the clean and exhilarating summer breeze, or the deadly fury of a prairie blizzard, give to a man

* "The unending vision of sky and grass, the dim, distant, and ever-shifting horizon; the ridges that seem to be rolled upon one another in motionless torpor; the effect of sunrise and sunset, of night narrowing the vision to nothing, and morning only expanding it to a shapeless blank; the sigh and sough of a breeze that seems an echo in unison with the solitude of which it is the sole voice; and, above all, the sense of lonely, unending distance which comes to the *voyageur* when day after day has gone by, night has closed, and morning dawned upon his onward progress under the same ever-moving horizon of grass and sky."

Capt. W. F. Butler's *The Wild North Land*, London, 1873, p. 50.

in an unusual degree a sense of standing directly in the presence of the great forces of the natural world.

In many places man's activities will eventually mask the character of the prairie. The flowers — the typical vegetation generally — can and will be preserved.* Smaller stretches of open level turf will doubtless always remain, even in the midst of intensive cultivation and urban development. But inevitably in many portions of the prairie man's trees and houses will break the openness of the ground, and its essential character, its boundless extent, will be no longer apparent except to those who in aëroplanes are above the minor interruptions of the view. It is a question whether the owners of the soil will ever go so far as to sacrifice many square miles of valuable prairie land merely for the preservation of a landscape effect. One thing is certain, at any rate, not by preserving its flora alone, but only by preserving its expanse can the spirit of the prairie be preserved.

The Barren or Tundra

There are examples of flat or rolling country where, with other skies and other vegetation, the character is utterly different. Such a landscape may be found in the occasional level stretches of the "Barrens" of the interior of Newfoundland and of parts of Labrador. Similar country is found in far northern Canada, north of "the land of little sticks," and in the Tundra of Siberia. In summer it is a land of bog and rock, largely treeless except where the depressions give shelter to gnarled and dwarf black spruce and birch, covered in places with hundreds of shallow little flashets of water, with curiously sharp and vertical edges made apparently by the undisturbed growth through centuries of the sedge and water-loving plants on their margins. On the somewhat drier knolls, there is a thick tufted carpet of leatherleaf, blueberries, sheep laurel, and mountain cranberry, and in places very likely a profusion of herbaceous flowers, whose cousins with us find their time of bloom from May to October, but which there must bloom almost together in the short season between snow and snow. It is a country bright and cheerful enough in its occasional sunshine, but usually even in summer desolate and wind-beaten, with driving fine rain and trailing mist, and in winter snow-buried, blizzard-swept, or

* Cf. Wilhelm Miller, *The Prairie Spirit in Landscape Gardening*, Circular 184 of the Illinois Agricultural Experiment Station, Nov. 1915.

still and silent in intense cold, offering to man so little that he can either use or destroy that it will probably retain its present character for many centuries to come.

Sand Dunes

Sand dunes are much the same the world over, for the natural conditions which bring them about are simple, and often repeated. On the Atlantic coast of the United States there are many places where the following conditions may be found. There may be an outer steep beach, exposed to the full force of the east wind and the Atlantic surf, and inland a stretch of pine barrens, or perhaps a sand flat running off into the shoal water of a bay behind the barrier sand-spit, where the shore-birds come in, in the fall. Behind the outer beach, beyond the reach of the tide, is a country of toppling sand-hills, gently sloping on the side facing the east wind, sharply scarped to the west, perhaps tufted with beach grass but often quite bare, and forever shifting, creeping as the dry sand drifts before the on-shore wind. The long roots of the beach grass, almost the only vegetation, will hold a sand-hillock for years, but if once the grass is dislodged and the sand is exposed to the full sweep of the wind, a hillock may disappear in a night and leave a hollow where it has been. In such a hollow among the dunes, strewn with wisps of dry seaweed, perhaps with the ribs of some long-buried wreck protruding from the sand, you may be glad to take shelter even on a summer day. But even then you hear the constant hiss of the wind through the beach grass, the whisper of the sand pouring over the leeward face of the nearby dune, the unescapable undertone of the surf. And every form which the inconstant sand assumes is the evident expression of the wind that made it.

Many a landscape, not strongly characterized by any form of the ground, takes a notable character from the vegetation which grows upon it. Such a character will of course be found repeated, if at all, where similar soil and climate conditions make similar vegetation possible.

The Sequoia Grove

When your pack-train first comes out of the manzanita and deer-brush as you enter a Sequoia grove in the California Sierras, and you see close at hand the trunks of the "Big Trees" (see Plate 7), you are not so much overpowered by their size as perhaps you had expected to be. It is only when you see a man on horseback beside them, or

when you compare with them the trunks of the six-foot sugar pines, which elsewhere you had looked on as forest monarchs, that the size of the sequoias begins to dawn upon you. Where these great trees stand close, the ground is free of undergrowth in their shade, but where the sunshine can filter through to the forest floor, there may be groups of smaller trees and shrubs, dwarfed and insignificant in relation to the sequoias, but forcing the party to wind about among them with the pack animals, seeking a level open place for a camp. Perhaps it is late afternoon when you reach the little bench or basin in the mountainside where the "Big Trees" are growing, and the sun has already sunk behind a ridge to the west. The trunks of the great yellow pines, sugar pines, and Douglas firs, perhaps a hundred feet high and six in diameter, stand in the growing dusk swaying slightly in the evening wind, but above their heads, borne on red-brown trunks immovable as stone towers, the short heavy gnarled branches and the close-massed foliage of the sequoias, green-gold against the darkening blue of the zenith, still catch the evening light. It may aid your understanding to know that these trees were much as they now are when the Norsemen first set foot on this continent, that they were old when Cæsar was born; but even without such helps to the imagination, these trees have a majestic — even an awe-inspiring — quality which is more usually the effect of great mountains or of the sea: you feel a sense at the same time of your own utter insignificance and yet of your being a part of a vast, solemn, ordered, and inevitable scheme.*

The Sierra Mountain Meadow

Any one traveling in the High Sierras inevitably seeks out the location of the mountain meadows for the reason that there, and often only there, can be found sufficient feed for his animals; but beside that use, such a meadow is in itself extremely beautiful, with a fairly definite characteristic beauty.† (See Plate 8.) It may lie so close to the peaks as to occupy the old glacier cirque at the head of a mountain valley, free from snow only a few months of the year, or it may lie anywhere along the course of the stream where a landslide may have made a dam and so eventually a flat of deposited loam. In any case the

* Cf. Lafcadio Hearn quotation, Chapter VI, p. 80. Also see chapter, The Sequoia and General Grant National Parks, in John Muir's *Our National Parks* (1901).

† Cf. The Wild Gardens of the Yosemite Park, Muir, *ibid.*

striking character of the mountain meadow is the contrast of its brilliant green open level with the barren ragged rocks or with the brown fallen needles under the dark firs of the surrounding slopes, — a contrast which gives a special value to the lushness of the plant growth — grass and sedge and veratrum — tall in the midst of the meadow where the sun has lain for long, and just springing from the ground at the foot of the retreating snow drift on the southern side of the deep valley or in the shade of the trees. After a long day of travel you may come, toward evening, to the edge of such a meadow. You unpack and unsaddle your animals and turn them loose, to roll and then to start leisurely and comfortably to feed. After your camp is set and your supper under way, you sit and smoke and watch the long shadows of the outstanding groups of taller pines stretch across the meadow, and the smoke of your fire make a level film across the open as the first gentle cold drift of evening wind from the snows carries it down the valley. You hear the gurgle of the stream near your camp, winding from pool to pool between steep earth banks in the flat, and perhaps a whisper from a distant fall in the same stream where it comes down from the snows over the cliff which heads the valley. It is hard to imagine that anywhere there is a natural landscape which has more completely an expression of peace and protection and rest.

The Bushy Pasture

In one fundamental way the "free landscape" to which most of us are accustomed differs from the examples which we have just been discussing. Although man has not interfered with our ordinary country landscape with the primary intention of changing its esthetic appearance, yet man's activities for other purposes have to a greater or less degree resulted in a distinct landscape character. Take, for instance, the case of the New England bushy pasture.* When the white man came, the land where now the pasture lies was probably woodland. It may have been cleared for purposes of pasturage, or it may have been tilled for some generations after the pioneers first cleared it, and then, with the abandonment of so many of the New England farms, reverted to the less intensive use of pasturage. Where the cattle have grazing ground enough, and where man has not expended the energy

* See a section of Charles Eliot's *Vegetation and Scenery in the Metropolitan Reservations*, 1897, reprinted in *Charles Eliot, Landscape Architect*, pp. 727–729.

to keep the area entirely in grass, such trees and shrubs have found their way in as can protect themselves against the browsing cattle. In New England these plants are noticeably the thorny and bitter things like wild rose and barberry and juniper and red cedar; and perhaps hawthorns, wild apples, and other hardy trees. First in this invasion by the forest come the roses and the red cedars, which the cattle can hardly browse upon at all. When a thicket of such material has established itself, other plants like shad-bush or hawthorn will grow in the midst of it, protected by it from the cattle; or at times plants like wild apples will spring up in the open, and though eaten down every year will gradually grow into so wide a mass that finally from its center, out of reach of the cattle, a vertical stem will start and bear a head of foliage, so producing a series of conical and afterwards vase-like forms. This particular group of circumstances, in which man's activity is a factor, results in an automatic choice of the plant materials in the composition and a consequent production of repeated and fairly definite plant forms, enframing and diversifying what remains of the pasture, giving a definite and recognizable landscape character, and often great pictorial beauty. The pastures most neglected are those outlying on the higher slopes of the hills, and so the typical bushy pasture which the name calls to mind lies high above the orchards and meadows of the valley, framed by the oak and birch and maple of the "wood lot," scattered with outcropping lichened ledges warm in the sun, and patches of sweet-scented fern, and hardhack and brambles concealing the old stone walls, — a landscape plainly once the work of man, but so far received back by nature that man's interference is no longer an incongruity, but rather an added pleasure of association. (See Plate 9.)

English Pastoral Landscape

The English pastoral landscape, like the New England pasture, had its origin in the clearing of land for economic use, but the land was thereafter thoroughly kept up and made as efficient as possible for a pasture, old large trees being preserved, or new trees being planted, singly or in groups, scattered throughout the rich grassland, to furnish shade for the animals. The foliage of these trees which is within the reach of browsing cattle is very usually destroyed by them, and thus is produced a "browsing line" parallel to the undulating ground surface, a unifying element in the composition, in a sense unnatural but not

always displeasing. The lower land, being the better soil, is usually that chosen for open pasture, while the knolls and higher lands are crowned with trees. The short-cropped turf displays to the full the gentle undulations of the ground, accented by the long shadows of the isolated trees and enframed by the adjacent woodland. The esthetic possibilities of these compositions of forest edge and free-standing trees and turfed ground surface appealed to the English people, and in the parks of the great English estates (see Plate 10) this pastoral landscape character was copied, intentionally for its esthetic effect, as a landscape style, which on account of its adaptability to so many of man's uses still forms the basis of much of our modern park and private place design. In studying such landscapes as this we find ourselves in a border land, where it is sometimes a matter of academic definition rather than one of important distinction to say whether the organization of the scene should be called style or character.

The landscapes which we have briefly discussed have depended primarily for their character some on ground form, some on vegetation, some, in a relatively slight degree, upon the hand of man. Further consideration of landscape character particularly as it is affected by ground forms will be found in Chapter VIII: Natural Forms of Ground, Rock, and Water as Elements in Design. These examples of landscape characters are but a few out of a great number, not necessarily the most important, but given because they are typical of many, and because the character in each case is distinctive and striking. Each student of landscape will have his own field of experience in this regard, and he may learn reverence for Nature and gain information for use in his own designs from any considerable experience of Nature's works, in whatever part of the globe he may have obtained it.*

Design in Landscape Characters

The greater and more striking examples of Nature's handiwork will serve the designer as inspiration and as training in appreciation, and he may by his knowledge of their peculiar value to the race have the duty and the great opportunity of defending them from destruction.

* See Frederick Law Olmsted, Sr.'s, application of ideas from tropical scenery to the planting of portions of Central Park, in a letter to Mr. Ignaz A. Pilat, 1863, published in *Landscape Architecture*, April, 1915, v. 5, pp. 124–133, under the title *The Esthetic Value of Tropical Scenery*.

But the humbler and less striking characters will be those to which he will usually go for models and for materials in his designs, since these will be the forms most commonly lying near the homes of the city-bred people for whom he works. His work will be on a small scale relatively to the great free landscape; the character which he will endeavor to produce will be of a less striking sort, and it will therefore be doubly necessary for him to make the expression of this character as complete, as unified, and as distinct as possible. He must be sensitive to feel what character is latent in the more or less inchoate scene on which he is called to work; he must know what of the elements now present are masking this character, and should be removed; he must know what can be added to perfect it without confusing it. But his duty as an artist is not accomplished even when he has achieved this success: he is bound also by other laws. He must so arrange his natural materials that, while they express the natural character of the landscape, they also produce harmonies of form, of color, of texture, harmonies of repetition and sequence and balance.* His designs must be, as far as is humanly possible, both interpretations of natural character and effective pictorial compositions. (See Plate 21.)

Where the landscape architect is dealing with designs of any considerable size, like parks, or large private estates, he cannot treat the area as one visual unit. Within his total area he must seize upon smaller unities; and therefore he will endeavor to develop each important view as a pictorial composition, and at the same time he will enhance and differentiate the individual landscape character of each separate and subordinate unit of his whole design. He will make a pine wood in one place, an oak wood in another; here he will steepen his brook to make a cataract, there restrain it to make a pool. He will cut out a group of trees in one place which interrupts the openness of his valley floor, and he will plant trees in another place to segregate a little woodland pool from the rest of the landscape. To increase the apparent height of a rocky ledge, he will remove débris from its base, and perhaps destroy some large and coarse-leaved plants and replace them with small rock-loving ferns appropriate to the situation and enhancing the naturalness, the scale, and the beauty of the ledge;

* Cf. Chapter VII, p. 89.

and the various different and perfected landscape characters, prōperly related, will greatly aid each other in the final effect of the whole design on the observer, perhaps by contrast of characters, perhaps by a culmination of effects which brings the attention well prepared to the most important object or view which the whole scheme may offer.

Landscape Characters in Relation to Economic Use and Maintenance

When natural scenery is preserved or re-created by man, not wholly as something to be looked at, but at least in part for some other use, the choice of the designer as to what characters shall make up the total character of his design is much limited. For example, a municipal forest may well serve the community which owns it in three ways: as a cover and shade and protection for the catchment area of the municipal water supply, as a source of supply for timber, and as a recreation place where approximately natural scenery may be enjoyed. These three uses are not necessarily incompatible, but the exact method of use in each case must be worked out with the other two uses also in mind. The trees which are planted for forestry purposes must of course be those of the greatest market value, those that produce the most, and the most valuable timber, in the shortest possible time. They must be so set out and so cut that this timber may be sent to market when it is at its maximum value and in the most economical way. Nevertheless it should be possible in a forest of any size and variation of topography to plant several different kinds of trees, perhaps planting evergreens on the higher land and deciduous trees in the river bottoms, and choosing the outlines of the different stands of timber so that they shall develop rather than obscure the various landscape units suggested by the ground. It should be possible to preserve or to plant, along the rivers and along the main roads, about the places where people would principally congregate to enjoy a view, trees purely for the sake of appearance, studied entirely for their enhancement of the natural character, and allowed to grow old and perhaps to replace themselves in natural close-growing groups, purposely sacrificing the commercial value of the timber which is thus kept out of the market. It might be possible, even in that part of the forest which was handled as a commercial asset, so to regulate the spacing of the trees, so to encourage certain types of undergrowth, that while the timber could still be economically cut, it would not produce an effect of stupid artificiality.

Again, in marketing the timber, it might often be possible so to choose the areas for the successive cuttings that at no one time would any considerable portion of the forest be entirely denuded of trees. Moreover if the different kinds of trees were, as we have said, largely confined each to its own landscape unit, the cuttings would not destroy these units by leaving them partly wooded and partly open, but would simply throw out of commission for recreation purposes a succession of landscape units, but only a few at any one time. Where the appearance of the landscape is much the dominant factor, a mixed stand of trees might be handled, and the trees cut singly as they reach maturity, thus at no time completely destroying any of the forest cover.

Where parts of the ground are to be used by large numbers of people, the forester must bear this in mind in choosing for these areas trees which will endure the destructive effect of trampling upon the ground and the undergrowth. And the landscape designer must take this circumstance into account in arranging his designs and the regulations for the use of the area, so that the crowds of people will be led to use those areas which are designed to receive them, and kept away from those areas where their presence in numbers will do great damage.* In considering this factor of crowds, the landscape designer will find that he is much restricted by it in the kinds of landscape character which he may hope to create and maintain. A hemlock forest shading a steep little gorge with a gravelly brook overhung with ferns, perhaps with trillium and wild geraniums near the brook, and lady's slippers further back under the trees, might be a landscape character natural to the locality, natural to the topography, and beautiful in itself; but if it is to be walked over by thousands of people daily, no amount of policing, no amount of upkeep will save it from destruction. The designer must therefore choose such characters for the separate units of his larger design that with the amount of money available for policing and upkeep, each character can be effectively maintained.

Again the designer's choice of landscape character in park or private place is motived by what he knows is possible in the way of future control of plant growth. It often happens that the size of the place on which the landscape designer is working necessitates his exemplify-

* Cf. Landscape Parks, Chapter XI.

ing the natural characters which he is producing at a somewhat reduced scale, and this may be successfully done if the growth of the vegetation be watched and kept within bounds, if certain less hardy plants desirable for the total effect be protected from the encroachments of their faster-growing and stronger neighbors. If the care and skill necessary for this upkeep are not to be forthcoming, then the designer must choose a landscape character perhaps less interesting, but which at least may be kept approximately in its correct expression with the amount of care that will actually be afforded. And this simpler thing well done will be infinitely preferable to the ineffective and shabby confusion which would result from the more ambitious design in its neglected state.

Value and Preservation of Characteristic Scenery

As man has increased on the face of the earth, as he has irrigated and tilled the deserts, as he has destroyed the forests to make his buildings and in their stead placed his farms and his cities, the amount of actually wild landscape has decreased, and in our time it is decreasing at an enormously accelerated rate, so that the unhampered expressions of nature's forces which were once the common, almost the inevitable, environment of man, remain only in inaccessible and inhospitable places, and even there they are rapidly passing away before the blind destructive forces of man's enterprise. A possession of inestimable value to mankind,* which once was so common that it went unheeded, is now becoming in our country so rare that we are beginning to appreciate its preciousness; and the responsibility rests upon us, especially upon our landscape architects, as it has never rested upon any generation of men before, to see to it that the scattered remnants of natural character and natural beauty, which we still have left to us, are preserved for the recreation and inspiration of the generations to come. (See Frontispiece and Plates 7 and 14.) This is not a duty that can be put upon the shoulders of our successors: the destruction of this natural beauty is imminent; unless it is definitely controlled, it is inevitable; and once destroyed, once put into the possession of man and adapted to his uses, this beauty in its highest manifestations is destroyed forever, and no late repentance, no expenditure of money, however great, will bring back to our successors what we can now so

* Cf. F. L. Olmsted, Sr.'s, remarks, p. 110 ff., of his *Public Parks*, 1902 reprint. (See REFERENCES.)

readily acquire and so easily preserve. All land at present unoccupied cannot of course be preserved in this way. Nearly all of it must and should be devoted to man's uses, and must therefore forever after express man's will, more than nature's character. But in every state of our union * there are considerable areas of land of such a character and so situated that the greatest service they can render to the community for as far in the future as we can predict, is to furnish to the people an opportunity for satisfying, as far as may be, a fundamental need which exists at least in some degree in every human being.

Man's Need of Free Landscape

Man, as a city-dweller, man living among dominantly man-made surroundings, is comparatively a new thing in the long history of the earth. The great racial inheritances of modern man come to him from beings who have lived as tenants on sufferance in a world ruled by the powers of untouched nature. Moreover, man is himself only one manifestation of the powers which give form and substance also to animals, to trees, to mountains. It is not remarkable, then, that even modern city-bred men should find something in wild nature which seems to fulfill and complete their being. So long as man leads an outdoor existence which gives him some contact with nature, even though not with wild nature, this fundamental need may be sufficiently met. But the modern city-dwelling race of men, if it is to exist at all for any length of time, must obtain in unspoiled landscape some relief from insistent man-made conditions. And such men as have any ability to feel their kinship with the outdoor world must get from nature more than this simple relief from physical oppression. They must have the opportunity of allowing their imagination to lose itself in the infinitely complicated, magnificent, and ordered whole of which they are a part, and the glory of which is their rightful heritage.

* Cf. State and National Parks and Reservations in Chapter XI, p. 321.

CHAPTER VI

LANDSCAPE EFFECTS

TASTE IN LANDSCAPE EFFECTS — VARIETY OF LANDSCAPE EFFECTS — LITERARY DISCUSSIONS OF LANDSCAPE EFFECTS — THE "BEAUTIFUL" AND THE "PICTURESQUE" — Their fundamental difference — Their application in design — EXAMPLES OF OTHER EFFECTS — Sublimity — Desolation — Melancholy — Gayety — Mystery — Effects from transitory conditions — HARMONY AND CONTRAST IN EFFECTS — EFFECTS IN LANDSCAPE CHARACTERS — EFFECTS IN STYLES — DESIGN IN EFFECTS.

The total reaction which the perception of a landscape may have upon a man, we have called landscape effect. Any landscape effect is made up in part of some kind of emotional response in the observer, and it is this emotion alone which makes the effect interesting and which gives value — in the eyes of the observer — to the landscape which is the immediate cause of the effect. It is the effect of a landscape, and particularly the emotional component in this effect, by which the worth of the character or of the style of the landscape must ultimately be judged. And in this effect alone, to the mind of the designer, style and character and all the characteristics of the landscape must find their ultimate esthetic justification.

Taste in Landscape Effects

The constitution of the minds of different men will make them differently sensitive to landscape effects*: not only will one man be profoundly moved by a landscape which impresses another only slightly, but one man may get great pleasure from a landscape which to another man is distinctly distasteful. In this way the innate sensitiveness of one man to certain kinds of landscape effects will make him, in judging a landscape which he sees, use a scale of values not at all in accord with the ideas of another man of a different type of mind. Thus the whole matter of landscape effects appears as a matter of taste and is individual to the same extent that taste is individual.

* Cf. Sitwell, *An Essay on the Making of Gardens*, p. 40–43.

Variety of Landscape Effects

Landscape effects are as various as the scenes which cause them, as various as the men who behold the scenes, but out of this infinity of observations men have found that certain fairly definite kinds of emotional experience can be distinguished and named and discussed. The names which we find ourselves using for landscape effects are really never very exact in meaning, and are merely names for a dominant emotional result which, being present in a number of experiences, makes them sufficiently alike to be talked of as a class.

Literary Discussions of Landscape Effects

The writers of the late eighteenth century put great emphasis on the value of effects in design, and carried the discussion and classification of effects into considerable detail; in the latter part of the period, indeed, carrying it to extremes. We find in various writings of the period a stereotyped enumeration of certain effects as pertaining to certain scenes, and in some of the designs which these writings influenced, Romantic symbolism was carried to absurdity.* A great many different effects were recognized. Some of them, simply designated by the name of the emotion which they caused, were definite enough to be discussed without confusion. But the more subtle and complicated effects were differently felt and differently named by the various writers, with the result that a considerable confusion and much vigorous discussion arose because of lack of definition of terms.

The "Beautiful" and the "Picturesque"

Two categories of effects, however, stand out as being of particular importance in all this discussion: — on the one hand, those effects which are associated with smooth and rounded objects, with soft-textured surfaces, with flowing lines, with sequential arrangements of form, — scenes, that is, in which the attention passes from object to object easily, by short stages, without sudden arresting of the attention by any object in the composition; on the other hand, those effects which are associated with violent contrast of light and shade, of color, of form, with harsh and coarse textures, with angular shapes, and with very individual objects, — scenes in which the interest is powerfully attracted by the characteristics of the objects, and where the attention passes, as it were, by a sudden leap from one feature in

Their Fundamental Difference

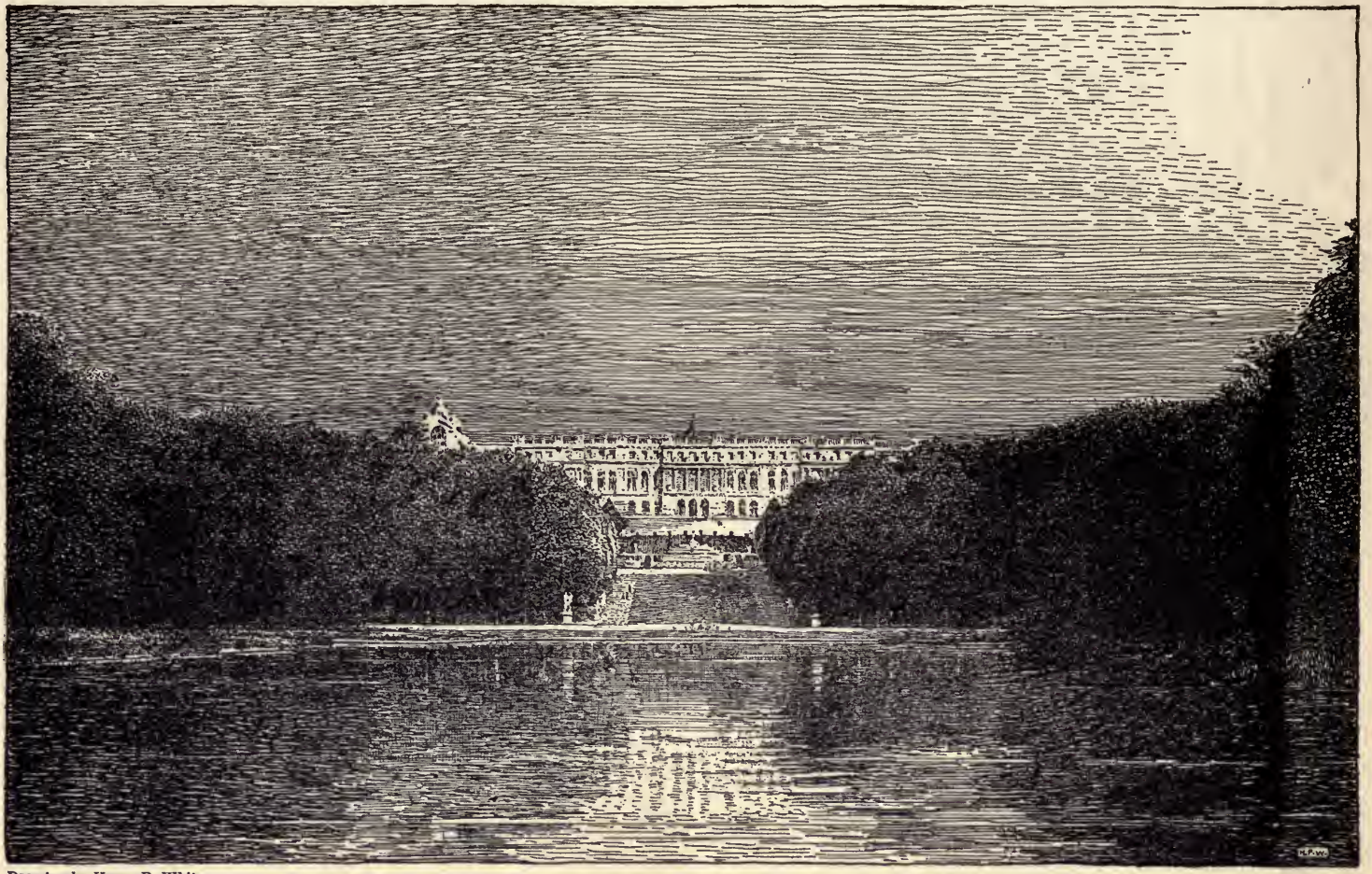
* See Chapter IV, section on the Romantic landscape style (p. 45). Compare the description of a garden designed to produce a series of violently contrasting emotions given in Triggs, *Garden Craft in Europe*, 1913, p. 304–305. (See REFERENCES.)

the composition to another. The first of these two classes was rather generally called the beautiful, the second the picturesque. In our modern parlance, beauty is no longer thus considered as a kind of effect, our estheticians looking upon beauty as arising from the perfection of organization rather than from the kind of organization of a composition. The term picturesque, meaning at first merely causing such an effect as might be produced by a picture, came, when used in the sense which we have just explained, to be endowed with a much more specific meaning not inherent in the word. In our present speech much of this acquired meaning has been again lost, and the word is used more in its simpler sense, although some of the associational flavor remains, as in the antithesis of "picturesque" to "pastoral" scenery in some discussions of park design.

Their Application in Design

As a practical consideration in design, however, these two different classes of effects are as important now as they were then. (Compare Plate 21 with Plate 12, and Drawing XXV, opp. p. 196, with Drawing XXVI, opp. p. 198.) On the one hand, many scenes, of effects different in subordinate ways, may be grouped together, and may be felt as being, as it were, emotionally similar, if their total effect is restful, calm, peaceful, depending on a smooth flow of attention. Such effects are produced through association, for instance, by pastoral landscape. Through the more direct agency of form, they are produced by the flowing curves of rolling grassland, or of a slowly winding river; by the rounded masses of low hills or of well-grown round-headed deciduous trees; or by the just proportions of a classic temple. The beauties of such scenes come to the observer slowly: no pressing demand is made upon his attention, and only through contemplation or repeated observation does he become aware of the full charm of the landscape before him. Such a scene has from the first a peculiar restfulness, and is not likely to lose its appeal even when it becomes thoroughly familiar.

On the other hand, an emotional unity may similarly be felt among scenes or objects which through their Romantic association or their association with violent manifestations of the forces of nature, or through their striking form or character, make a powerful immediate appeal to the interest, and either draw the attention strongly from object to object or concentrate it intensely on one point. Such a scene



Drawing by Henry P. White

THE CHATEAU FROM THE END OF THE LONG CANAL, VERSAILLES

might be, in extreme terms, the landscape of shattered crag and wind-distorted trees of the smuggler's pass in *Carmen* or of the Wolf's Glen in *Der Freischütz;* or of the Matterhorn, or Mont St. Michel, or the great structure with its giant Hercules crowning the hillside vista at Wilhelmshöhe; or, in less striking manifestation, a little rocky glen with a tumbling waterfall, or a hilltop ledge with a single gnarled pine.*

Examples of Other Effects

Just as these two large and fundamentally different effects have been recognized by critics and designers, so out of the multitude of effects an indefinite number of others, of varying distinctness and of varying importance, have also been recognized. In this chapter we shall discuss a few of these effects, which on account of their common appeal to all observers have more or less definite names and values.

Sublimity

Sublimity, grandeur, in landscape is commonly the result of the perception of the vast size or power or duration of the manifestations of nature in comparison with the insignificance of man. It is most commonly produced therefore by the extent of the landscape, or the size of some object in it, — a great cliff or a range of mountains, or a vast plain or the sea, or perhaps a forest of giant trees. (See Frontispiece and Plates 7, 13, and 23.) It will be enhanced by, indeed it will not be effected without, some means of measuring the actual size of

* "The different effects which art is able to produce, however various and incommensurable they may radically be, are commensurable at least in this: that each in some degree makes a demand on our *attention.* Some works of art affect us, as it were, by infiltration, and are calculated to produce an impression that is slow, pervasive and profound. These seek neither to capture the attention nor to retain it, yet they satisfy it when it is given. Other works arrest us, and by a sharp attack upon the senses or the curiosity insist on our surrender. Their function is to stimulate and excite. But since, as is well known, we cannot long react to a stimulus of this type, it is essential that the attention should, in these cases, be soon enough released. Otherwise, held captive and provoked, we are confronted with an insistent appeal which, since we can no longer respond to it, must become in time fatiguing or contemptible.

"Of these two types of esthetic appeal, each commands its own dominion; neither is essentially superior to the other, although, since men tend to set a higher value on that which satisfies them longest, it is art of the former kind which has most often been called great. But they do both possess an essential fitness to different occasions."

Geoffrey Scott, *The Architecture of Humanism: a Study in the History of Taste,* 1914, p. 83–84.

the objects beheld, that is, some means of determining their scale relation with a man.*

It is proverbially but a step from the sublime to the ridiculous, and it is true in landscape design that the sublimity of a great view may be much injured by a mean and impertinent foreground, or by the inclusion within the view of anything which would tend to rouse in the beholder's mind a train of thought which is particularly commonplace. The contrast of the two trains of thought in this case is almost as violent as possible, and it is likely either to distract the attention from the dignity of the view, or by its very incongruity to introduce a comic element equally destructive to the sublimity of the landscape effect. On the other hand, a man who perceives the essential unity of all nature, who recognizes in the trickle from a melting snow-patch the manifestation of the same forces that have shaped the mountains, — such a man constantly finds himself contemplating the vast natural forces and discovering expressions of their sublimity in commonplace and relatively insignificant objects.

The works of man may produce an effect of grandeur in their own smaller way by their size and mass alone, but man can also enhance the

* "The first sight of a group of such forms [giant palms], in their natural environment of tropical forest, is a magnificent surprise, — a surprise that strikes you dumb. Nothing seen in temperate zones, — not even the huger growths of the Californian slope, — could have prepared your imagination for the weird solemnity of that mighty colonnade. Each stone-grey trunk is a perfect pillar, — but a pillar of which the stupendous grace has no counterpart in the works of man. You must strain your head well back to follow the soaring of the prodigious column, up, up, up through abysses of green twilight, till at last — far beyond a break in that infinite interweaving of limbs and lianas which is the roof of the forest — you catch one dizzy glimpse of the capital: a parasol of emerald feathers outspread in a sky so blinding as to suggest the notion of azure electricity.

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"One of the first elements of the emotion [that such a vision excites] to become clearly distinguishable is the æsthetic; and this, in its general mass, might be termed the sense of terrible beauty. Certainly the spectacle of that unfamiliar life, — silent, tremendous, springing to the sun in colossal aspiration, striving for light against Titans, and heedless of man in the gloom beneath as of groping beetle, — thrills like the rhythm of some single marvellous verse that is learned in a glance and remembered forever."

Lafcadio Hearn, *Shadowings*, 1907, p. 217–219 in essay, Gothic Horror.



Drawing by Henry P. White

GRAND TRIANON, VERSAILLES

X

effect of his designs, to a degree seldom found in nature, by consistency of scale and perfection of organization all tending to the same emotional result. And here again the effect of sublimity or grandeur is increased if the buildings evidently express some great idea or emotion, religious or other, which makes them thereby the more a part of the great forces of the universe.

Desolation

If the perception of the littleness of man in comparison with the might of natural forces gives us in a particular case a feeling of helplessness we may call the effect awe, or in an extreme case even terror, or if we are describing the landscape we may call it stern, or menacing, or perhaps terrible, according to the degree of the emotion which it arouses. These effects are likely to be partly the direct result of darkness, perhaps also of cold, and of violent wind, but they are also and in larger part the result less directly of the difficulty and danger or toil which the observer perceives that the place would offer to any one who endeavored to travel through it or remain for long in it. Where the effect of unpleasantness and difficulty comes from the exposure and barrenness of the country, we are likely to call it desolation.* (See Plate 11.)

Melancholy

The melancholy landscape has very closely the type of effect which we have discussed earlier in this chapter and have called, for lack of

* "We need not go so far as the Arctic regions to feel effects of dreariness in all their power. Our own island has regions of miserable desolation, of which perhaps the worst that I have seen is the great moor of Rannoch. There is an excellent description of it in Macculloch, hardly to be surpassed for the skill with which it conveys the depressing aspect of such scenery: —

"'Pray imagine the moor of Rannoch; for who can describe it? A great level (I hope the word will pardon this abuse of it) a thousand feet above the sea, sixteen or twenty miles long and nearly as much wide, bounded by mountains so distant as scarcely to form an apprehensible boundary; open, silent, solitary; an ocean of blackness and bogs, a world before chaos; not so good as chaos, since its elements are only rocks and bogs, with a few pools of water, bogs of the Styx and waters of Cocytus, with one great, long, sinuous, flat, dreary, black Acheron-like lake, Loch Lydoch, near which arose three fir-trees just enough to remind me of the vacuity of all the rest. Not a sheep nor a cow; even the crow shunned it and wheeled his croaking flight far off to better regions. If there was a blade of grass anywhere it was concealed by the dark stems of the black, muddy sedges and by the yellow, melancholy rush of the bogs.'" P. G. Hamerton, *Landscape*, 1885, p. 117. (See REFERENCES.)

better words, peaceful, restful, suave. It is free from sudden motion or change, it is sequential in line, and of soft color. Its gently depressing quality is due either to some gloominess in local color, or in atmospheric conditions, such as approaching darkness or a drizzling rain, or to some melancholy thoughts aroused through association (see Plate 2), — aroused, for instance, by a ruined building, a churchyard, an old and decaying tree, or by anything which suggests the end or destruction of something once beautiful or prospering.

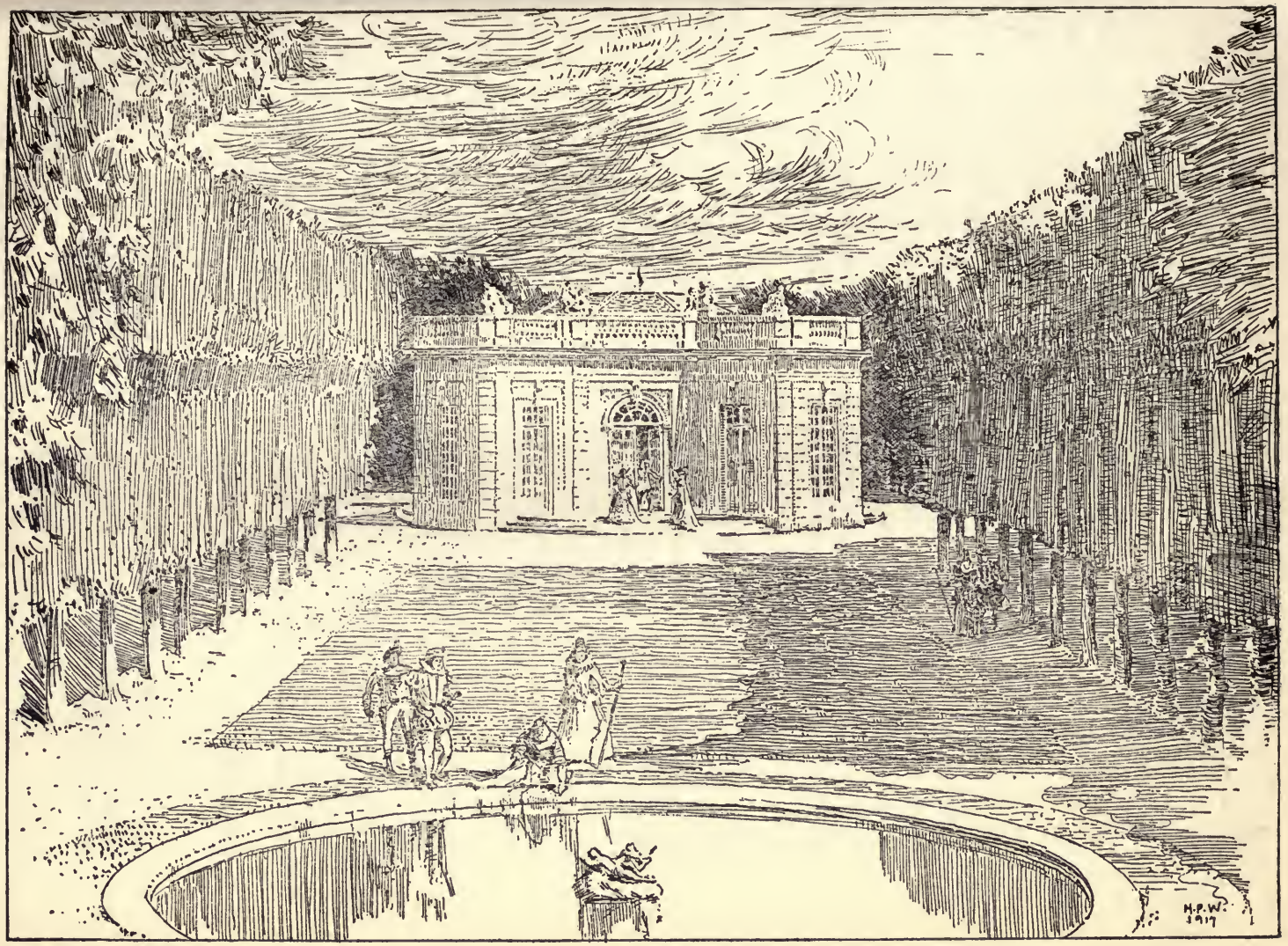
Gayety

The gayety of a scene seems to depend objectively on a multitude of small motions, and on bright light with enough small and broken contrasting shadow to make the landscape scintillating and sparkling. The play of a water surface, the movement of branches and their shadows in the sun and breeze, the twittering of birds, would to most of us make a landscape seem gay. Gayety being a somewhat superficial and transitory emotion, it would usually be overshadowed in the human mind by feelings of awe or grandeur or sublimity if a landscape aroused these feelings as well, and therefore if a landscape is called gay, it is likely to be a small and not very impressive scene.

Mystery

The effect of mystery is the result of impossibility of complete perception. It may be caused by simple inability to see the landscape with any distinctness, as for instance when the scene is shrouded in haze or in a snow storm or in darkness, or it may be that the foreground is clearly seen, but that an important part of the landscape known to be present is nevertheless concealed, as where a river or a road winds out of sight behind some intervening barrier. Or it may be that sheer multiplicity of detail prevents our clear comprehension of the landscape, as when we look at the misty leaves and branches of a thick deciduous wood in early spring. The result of this mystery upon the mind of the observer may be little more than mere confusion, but more often it is a pleasant challenge to the imagination which sets the observer to trying to determine for himself by closer investigation what is concealed from his first glance, or if this be impossible, to filling in and completing the unseen landscape according to the play of his own fancy.* (See Plate 20.)

* "In parts it has been allowed to grow up to a rather monotonous and weedy-looking dense undergrowth which presents an uninviting barrier nearly uniform in



Drawing by Henry P. White

THE MUSIC PAVILION, PETIT TRIANON, VERSAILLES

Effects from Transitory Conditions

It is to be noticed that landscape effects often depend objectively on transitory conditions like light and shade, hour of day, weather, and season. (See again Plate 20, and also Plate 11.) A landscape of rocky upland country about a mountain tarn might be mysterious in a day of low-drifting clouds, stern or desolate in a storm, and perhaps on a bright breezy spring morning even gay.

Harmony and Contrast in Effects

In the larger landscape designs which are necessarily divided into a number of separate scenes,* and where the observer comes to one scene with the memory of the previous scene still fresh in his mind, it is to be noticed that this memory is practically the landscape effect of the previously beheld scene, and that therefore in the total effect of the whole design the sequence and the nature of the subordinate effects must be a matter of careful study.† A broad outlook from a hillside is well led up to by a walk through a deep and gloomy wood. The

quality wherever the eye seeks to penetrate the depths of the wood; while in other parts the undergrowth has been so completely removed that the eye ranges freely in every direction amongst a rather monotonous succession of bare trunks and through them to the open spaces or to the buildings that lie beyond. In either case there is a loss of that enticing mystery and that feeling of indefinite extension inviting one to wander from glade to opening glade which forms one of the most charming and refreshing qualities of sylvan scenery. . . . Glades of turf with moss and other low ground cover plants, free from bush and brambles that impede the foot and from foliage at a height that obstructs the vision, ought to lead into the woods like narrow extensions of the adjoining meadows, disappearing out of sight around a bend of denser undergrowth on either side in a manner to invite exploration, branching irregularly into other glades, widening here and there as the disposition of the larger trees may suggest, forming at some points dark shady tunnels that widen out beyond into sunny but secluded openings in the heart of the woods. There is need of skilfully developing intricacy, mystery and harmonious variety in the composition of glades and thickets, and of light within the shade; and at the same time and by the same means of developing such conditions as will lead great numbers of people to wander in comfort and safety through the pleasant labyrinth."

From F. L. Olmsted, Jr.'s unpublished report to the City Plan Commission, Detroit, Mich., March 19, 1915.

* See Chapter V, p. 71.

† "Gardening indeed possesses one advantage, never to be equalled in the other art [architecture]: in various scenes, it can raise successively all the different emotions."

Henry Home, Lord Kames, *Elements of Criticism*, from Chapter XXV, Gardening and Architecture.

lively cascade is set off by the still pool below it. The effects of the quiet open landscape in one part of a great park and the meeting-place for crowds in another part are each heightened by the presence of the other. The shady pergola at the end of a garden, the sunlit open flower beds around the central fountain, are each the more attractive for the contrast the other affords.

Effects in Landscape Characters

Any natural feature sufficiently unified to have a character will have thereby its own effect. In some cases, this effect, this spirit of the scene, will seem a definite individuality. This is particularly true of waterfalls, which have so much in form, in motion, in setting, to make them individual. This is well exemplified by the three falls shown in Plates 12, 13, and 14, which, although they all lie not far apart on the same river, are still strikingly different in their expressions.

In a varied natural landscape, particularly that of a mountainous country, the sequence of natural characters produces its corresponding sequence of effects, each enhanced in the mind of the beholder by the memory of the others. Take for instance what a man may see who climbs a peak in the Alps. He starts in the early morning from his room in the little Swiss village in the sheltered valley, and walks in the half-light through the narrow crooked street between the overhanging houses where people are just astir. Presently he comes out on the open grassland, steep, sidelong, clinging to the hill, but every foot of it either used for pasturage or cut for hay for winter fodder. Then he enters the deep spruce woods, still cold with the night air before the coming of the sun, and goes upward along the valley of a mountain brook, following first a road down which the wood for the village is hauled, and then a path which scales the head wall of the brook valley. As he comes over its crest, he finds himself above the wood and for the first time in the morning sun, and he sees across the lower open ridges of rock and snow the peak which he means to reach. For two or three hours he goes upward, over slopes of rock and sparse grass and then through snow which, first lying in wisps on the north sides of bowlders, soon covers all the ground and stretches in furrowed fields toward the foot of the peak. Looking down, he sees the village from which he has come, a group of toy houses on a patch of green velvet grassland, still



Drawing by Henry P. White

THE HAMEAU, PETIT TRIANON, VERSAILLES

in the shadow of the valley. He is no longer as fresh as when he started, he pays less attention to the little interesting things or the greater beauties along the way, but he comes to the rock wall of the peak with the concentration of energy with which a wrestler meets a worthy foe. Perhaps for hours, putting all his strength into each calculated cautious motion, he climbs from one chosen hand-hold and foot-hold to another until he reaches the summit, and is rewarded by a stupendous sweep of view over rocky peak and snowfield, below which the hills that hemmed in the valley of his last night's stay are mere undulations in the vast expanse dominated by the peak on which he stands.

Effects in Styles

In landscape compositions created by man, sequence and mutual enhancement of effects may also be found, as the calculated results of design. When the chateau of Versailles was built, with its surrounding broad terraces, its elaborate pools and statuary, its great fountains, its mile-long reach of artificial water, it was intentionally the expression of the pride and power of the King of France.* Nothing else but enormous size could have conveyed this effect. Nothing but this strict and pompous formality, this centering of a gigantic scheme on a great palace, exactly in the heart of which was the private room of the King, could have so well expressed what the design was intended to express, the concentration of the wealth and power of seventeenth century France in Le Roi Soleil. (See Drawing IX, opp. p. 78.) The Grand Trianon, originally a retreat, was rebuilt as a residence for Louis XIV, who even in his private life could not put aside his kingly state. The scale of the buildings is smaller, their main arrangement somewhat less rigidly axial, but they expressed merely another phase of the royal magnificence which created the Chateau. (See Drawing X, opp. p. 80.) The Petit Trianon was built a century later, intentionally as a place for escape from the overpowering conventions and restrictions of the court. In its design, as in its decoration, it is dainty, delicate, intimate, almost a play-house rather than a dwelling, but still a queen's play-house, built without consideration of cost but only of the effect desired. (See Drawing XI, opp. p. 82.) The Hameau — in the midst of the "English Garden" which was itself a

* Cf. Chapter IV, p. 42.

reaction against the formalized grounds of the Chateau and the Grand Trianon — expressed still more definitely an attempt to seek relief from the etiquette and repression of court life. Here, in peasant dress, Marie Antoinette forgot, or played she forgot, that she was queen of France. The theatrical farm buildings suggested as far as might be a totally different life; their irregular forms, ivy-covered walls and thatched roofs, their informal setting of tree and pond, were intentionally created to produce through their rustic style, their naturalistic character, an effect as different as possible from the formal setting of the rest of the life of the court. (See Drawing XII, opp. p. 84.)

Design in Effects

In planning his work, particularly in its larger outlines, the landscape architect has need to remind himself that it is these effects, and not physical characteristics as such, which are ultimate units in his design. An appreciation of this fact will sometimes enable him to escape from a difficulty which otherwise might seem insurmountable. It usually happens that a client expresses his desires in concrete terms, often in very uncompromising terms indeed; he tells the landscape architect that he wishes certain definite objects in certain definite arrangements. The landscape architect may know that such arrangements of objects would be inevitably ugly. He should have the power to look back of the definite objects proposed by the client and to appreciate the large fundamental effect for which they stand in the client's mind. This effect may well be worthy, and the designer may hope to work out some other arrangement of objects which will produce the same desired effect, and so satisfy the client, — an arrangement which shall be desirable also in other respects, and not open to the objections which the designer finds in the client's original suggestion. A client may, for instance, say that he desires to build, on the exposed summit of a rocky and pine-clad New England hill, a replica of a certain long, low, flat-roofed, stucco Italian villa. The designer may know that such a structure would be ugly in the given setting, and he may find that what really appeals to the client in that particular villa is not its form, but perhaps a certain effect of refined magnificence of living. The designer may then be able to persuade the client that this effect which he desires may be more cheaply, more beautifully, more

appropriately expressed by a structure built of the local stone, suggesting perhaps an English country house of refinement and importance, conveniently related in an informal way to the topography, and harmoniously crowning with its irregular mass the rugged summit of the hill.



CHAPTER VII

LANDSCAPE COMPOSITION

COMPOSITION IN LANDSCAPE AND IN PAINTING — ORDER IN COMPOSITION, OBJECTIVE AND SUBJECTIVE — SEGREGATION OF THE COMPOSITION — UNITY AND ATTENTION — Attention and training — Emphasis, contrast, climax, dominance — Landscape composition within the visual angle — Unity of larger landscape compositions — THE FORMS OF ORDER IN COMPOSITION — REPETITION — Harmony, monotony, and variety — SEQUENCE — Sequence of continuation or repetition — Rhythm — Progression — BALANCE — Symmetrical — Occult — Intensification of emotion from repetition, sequence, and balance — CHARACTERISTICS OF OBJECTS IN LANDSCAPE COMPOSITION — SHAPE — Individuality through shape in landscape composition — Value of shapes and their arrangement in composition — SIZE, SCALE, AND DISTANCE — Absolute and relative scale — Indication of scale in landscape composition — Effects of perspective — TEXTURE — Scale relation of texture to size and shape — COLOR — Color and light — Hue, intensity, and value in color composition — Emotional effect of colors — Color harmony — Color in landscape composition — LIGHT AND SHADE — Light and shade unity in landscape composition — Variability of light and shade — ATMOSPHERE AND ATMOSPHERIC PERSPECTIVE — As a consideration in landscape composition — ILLUSIONS IN COMPOSITION — Of material — Of shape — Of size — Of character — Associational illusions — LANDSCAPE COMPOSITIONS — Typical kinds of pictorial compositions — The vista as a typical example — Pictorial enframement, foregrounds, backgrounds, and planes of distance — OBJECTS IN LANDSCAPE COMPOSITION ACCORDING TO THEIR DESIGN VALUE — Temporary elements.

Composition in Landscape and in Painting

Landscape composition is to the landscape architect, as it is to the landscape painter, the arrangement of the elements of his design into an ordered whole. The painter, however, is making a composition in pigments on a flat canvas which represents his subject as seen from one point of view only; and he is therefore chiefly concerned with the two-dimensional relations of his elements, in the plane of his canvas, as seen from that point of view. The three-dimensional relations of things which he represents he can only suggest by the way he handles

the color, the drawing in perspective, the atmosphere, in his picture. The landscape architect is making a composition in solid objects in the outdoor world which will be seen from many points of view, and so the three-dimensional relations of his elements will be to him the more important consideration. It is true, however, that any one view of the landscape architect's work will produce on the spectator's mind an effect closely comparable to that produced by a painting, and therefore the landscape architect must not neglect this two-dimensional or pictorial relation in his work. It is indeed only through obtaining a series of these two-dimensional views that an observer can perceive or value the three-dimensional composition.*

Order in Composition, Objective and Subjective

Our pleasure in the composition of a landscape depends on our appreciation of the ordered relations which exist among its parts. This order must inevitably consist objectively of some similarity of physical characteristics among the parts, or of some discernibly harmonious space relation among them; that is, the separate objects in the composition must be either harmonious in color or shape or texture or else harmoniously related one to another by repetition or sequence or balance. Stated subjectively, the pleasure is based on the pleasant relations of the interests which are aroused by the various characteristics. The repetition, sequence, or balance which produces order in a composition is in this sense therefore repetition, sequence, or balance of interest, and not merely of objects or of characteristics. This can easily be proved by observing a picture which contains upon one side

* "The great object of our present inquiry seems to be, what is that mode of study which will best enable a man of a liberal and intelligent mind, to judge of the forms, colours, effects, and combinations of visible objects: to judge of them either as single compositions, which may be considered by themselves without reference to what surrounds them; or else as parts of scenery, the arrangement of which must be more or less regulated and restrained by what joins them, and the connection of which with the general scenery must be constantly attended to. Such knowledge and judgment comprehend the whole science of improvement with regard to its effect on the eye; and I believe can never be perfectly acquired, unless to the study of natural scenery, and of the various styles of gardening at different periods, the improver adds the theory at least of that art, the very essence of which is connection: a principle of all others the most adapted to correct the chief defects of improvers."

Sir Uvedale Price, *Essays on the Picturesque*, 1810, v. 1, p. 12. (See REFERENCES.)

of the center a large tree-mass and on the other a small figure of a man; the small human figure may be perfectly balanced in interest against the much larger tree because of the greater number of associations which are aroused in the human mind by a human figure than by a tree. Such a single balance of interest in the picture may not make the picture balanced as a whole, however. The total interest of the area on one side of the center — in color, in shape, in contrast, in all that attracts and holds attention — must balance the total interest of the other side.

Segregation of the Composition

In composing a landscape, the designer's first act is the direction of the attention to it as a unity, thereby segregating it in the observer's mind from the outside world. In this respect the landscape architect is less fortunate than the painter and the sculptor. The painter gets segregation for his picture by its frame; the sculptor has his statue isolated on its own pedestal. The landscape architect, however, is dealing with an area of land which is actually continuous with the rest of the earth's surface, yet he too must set the limits of his composition as the first necessary act of producing it, and then he must correlate the subordinate parts of this unity. This segregation may at times be obtained like the sculptor's by somewhat isolating the object, as for instance, in the case of a free-standing summer house, a grove, a hill, an island; but almost always it is obtained either by actual inclosure or by pictorial enframement. For instance, actual inclosure may be given by a fence, a border plantation, or woods about an open glade; while the arrangement of a view through a cut vista-opening or between foreground trees may give pictorial enframement. The first is effective from any point of view, the second only from a chosen point. In both cases we can see that the fundamental effect produced is concentration of the observer's attention upon the unity designed. Where mere physical segregation or enframement may be impossible or undesirable, sufficient unity may sometimes be obtained merely by concentration of attention by striking characteristics or by unity of parts, for instance by a brilliant mass of flowers in a shrub border, or by a unified pattern in a parterre bed.

Unity and Attention

The fact that the effective unity perceived in any scene is merely the unity on which attention is at the moment concentrated is shown

by the experience that one may perceive several distinct and different unities at different times in exactly the same view. For example, a man may come into a room at the end of which is a mullioned window. He first sees merely a pattern of panels of light in a lattice of dark. Soon he notices, through the window, certain converging lines of paths, balanced masses of flower color, and dark overarching trees, and he enjoys the picture so produced within the frame of the window. His attention then goes still farther, and from this picture and its elements he infers a formal garden, which his imagination constructs in all its dimensions. Plate 15 is another illustration of the possibility of alternative unities from the same view. In this picture, according as the attention falls, one sees either a pattern of tree trunks and branches with a background of landscape, or a view of a winding road seen through a foreground of trees.

Attention and Training

The associative processes of the mind will make it group certain things together and automatically exclude certain incongruous things, so that these incongruous things are often not remembered and sometimes not even noticed. The things most likely to be observed in this way are therefore those which are most akin to the memories of the particular observer.* For instance, the horticulturist sees a plant, the geologist an outcrop, the painter a composition. Training in a certain kind of perception will make that perception more automatic and therefore unconscious, and will make the objects so perceived more interesting, hence the attention of each man is apt to rest first and longest on objects which he is "trained to see," necessarily to the partial exclusion of other objects, which might be got by synthesis of the same visual material along other lines. On the other hand, an unfamiliar object among familiar ones may strike the attention by force of contrast, and hold it by force of novelty.

Emphasis, Contrast, Climax, Dominance

The relative force with which the different objects in a composition will strike the attention, the relative interest, and duration of interest, which the observer will feel in them, is something of the first importance in any design. Any emphasizing of an object is merely arranging that the attention shall be attracted to it. All the effects of contrast, of novelty, of surprise, are due to the fact that the mind grasps with

* Cf. Chapter II, p. 12.

particular concentration of attention anything different from that which it has just considered, and the closer the juxtaposition of the two dissimilar perceptions, in time or in space, the more powerful the appeal to the attention. Effects of climax depend on a sequential demand on the attention, culminating by directing the attention to the object of most interest. An object may to some extent be made dominant in a composition by a sequence of attention leading to it, but unless it is itself capable of holding the attention for a sufficient time, through its own interest, it will seem to be occupying a place too important for its worth.

Landscape Composition within the Visual Angle

There is a physical consideration which tends to limit the field within which the attention can be attracted by objects in a pictorial composition, namely, the fact that the human eye is so constituted that only such objects can be clearly seen at the same time as lie within the so-called angle of vision, which is normally about twenty degrees. The pictorial compositional relation of objects can be well perceived only when they lie so close together that the attention is attracted to each of them according to its value in the composition without being distracted by the necessity of turning the eye or turning the head to bring different parts of the composition into the field of vision. This consideration is as true of a landscape composition as it is of a painting. A man may stand before a landscape and without moving his body see half around the horizon, but it is only if the landscape unity be composed within the visual angle that he can well appreciate it as a pictorial composition.*

Unity of Larger Landscape Compositions

A landscape composition, however, may give pleasure even though it covers a wider angle of view than can be included in a pictorial unity. It may have a three-dimensional unity, an organization in plan and elevation, which can be reconstructed in the mind from the memories of a number of different views, which views indeed may not be all taken from the same station point. It is quite possible that an observer might remember a garden as well composed and beautiful even although it were impossible to take, in that garden, a single

* Cf. the discussion of the visual angle, p. 779–781, in N. S. Shaler's article, already referred to, *The Landscape as a Means of Culture*, in the *Atlantic Monthly*, Dec. 1898.

photograph that would be pictorially well composed. Repton said of Shardeloes :

"This park must be acknowledged one of the most beautiful in England, yet I doubt whether Claude himself could find, in its whole extent, a single station from whence a picture could be formed. I mention this as a proof of the little affinity between pictures and scenes in nature." *

As the compositions are larger and less likely to be all visible from one place, so does remembered effect come to play a larger and larger part in producing the total effect of the composition. So do consistency of style, of character, and of emotional effect become more and more important as unifying factors in the design. Pictorial unity then becomes an excellence of individual parts.

The Forms of Order in Composition

The success of the landscape designer in producing the most beautiful landscape compositions possible under the chosen or enforced limitations of the problem will depend on his skill in combining the shapes and textures and colors at his disposal in a pleasant and orderly fashion.

The units may be such and so arranged that motion of attention from unit to unit is easiest in a certain direction. This effect is *sequence*.†

The units may be such and so arranged that this tendency to motion of the attention is equal in two opposite directions from a vertical axis. This is *balance*.

The units may be all the same in their interest and consequent ability to attract attention, or at least the same throughout in some characteristic. This is *repetition*,—of the units or of the characteristic, as the case may be.

These forms of order — repetition, sequence, and balance — may be manifested in the two-dimensional pictorial scene, or they may be perceived in the three-dimensional object, the two-dimensional aspect of which need not manifest them directly. For instance, a row of columns is in reality a repetition, but a picture of a row of columns or a view of them in perspective is a sequence. A formal garden seen

* Repton, *Theory and Practice of Landscape Gardening*, 1805, in Chapter V, p. 65.

† Repetition, sequence, and balance, the terms used to denominate three forms of order by Dr. Denman W. Ross in his book *On Drawing and Painting*, Boston, Houghton, Mifflin Company, 1912.

from near one corner may be perceived as symmetrical although the pictorial view of it is not.

Repetition

Repetition is the most fundamental of the forms of order, and the one which occurs most frequently. To have harmony there must be repetition; there may be also sequence or balance. Repetition in a composition may be the repetition of a number of objects all precisely alike except in position; or the repetition may be a repetition of certain characteristics or relations only of the objects, of their shape and size, their color, their attitude, or the interval which separates them. (See the tree trunks in Plate 24 and the roofs in Plate 36.) The repetition may be perceived when only one characteristic is repeated. A very varied landscape may be unified by being predominantly green. The repetition of a tone through a rendered drawing, the repetition of boundary lines of the same width around a plan, the repetition of bay trees of the same size and shape to mark the corners of a formal pool, the repetition of letters at the same slant in the title of a drawing, and the repetition of the same interval between these, all make for harmony and thus for order in design.

Harmony, Monotony, and Variety

Complete repetition gives complete harmony. Such harmony will often be monotony, but it is none the less harmony. Its opposite, variety, is merely relief from monotony. Variety is not a principle of organization, but the pleasure of its perception is a principle of the organization of the human mind.

Sequence

Sequence depends on the progressive change of at least one characteristic in a series of objects. The other characteristics may or may not be all constant, but enough of them must remain constant to make the change on which the sequence rests perceptible. A succession of objects might change sequentially in shape, or size, or color; but if they changed in all these characteristics at once, they might become so rapidly different as not to appear sequential at all.

Sequence of Continuation or Repetition

The simplest form of sequence is that of continuation or repetition. Such sequences, essentially linear, have the very greatest value in connecting various parts of a design. (See the roads in Plates 15 and 31.)

"The idea of Sequence is of movement and the satisfaction and pleasure we get from any Sequence lies in its movement, not in divergences and other obstacles to progress. Other things being equal, the movements which are

most agreeable are those which are consistent in character and easy to follow. It must not be argued that the sequences in which we move quickly and easily are for that reason the most interesting. There is many a road which is perfectly straight which has no divergences and is without obstacles or difficulties which is, nevertheless, a very stupid road to travel on. It may offer us the possibilities of easy and rapid motion and be a perfect speedway and have no other interest. Unless we are in for the pleasure of easy and rapid movement the road I have described has no attraction for us. We prefer a road on which we are entertained as we go along. We have a perfect illustration of sequence in a straight line, but we get through it quickly and are not at all interested. We prefer, perhaps, to move slowly, even very slowly, if there is something to interest us, to make it worth while. . . . When the artist has established his sequence, which is a certain direction and form of movement, he can put into it no end of interesting features provided that he keeps the sequence unbroken and does not admit of diverging interests or obstacles which stop the movement and make it impossible. The interests and attractions which are set together in any sequence should have a logical connection and relation and the relation should be one of sequence. The first interest should lead us to the second, the second to the third, and so on. [See the snowshoe tracks in Plate 17.] In that way unity is secured with no very serious loss either of interests or of attractions." *

Rhythm

A second form of sequence is that of alternation producing the combination of harmony with rhythm.

"When any line or sequence is broken repeatedly and at equal intervals, we get alternations which give us the feeling of Rhythm. Rhythm means not a continuation merely but a continuation with regularly recurring breaks or accents. In sequences of Continuation we have the feeling of Harmony, that is all, but when the continuity is broken at regularly recurring intervals by a certain change we get in addition to the feeling of Harmony the feeling of Rhythm. [See the rhythmic repetition of trees in Drawing XI, opp. p. 82, and in Plate 16.]

"It is possible to produce the effect of Rhythm with an alternation of certain elements; other elements being, so to speak, imposed upon this alternation as concomitant variations. We may, for example, have an alternation of large areas of one shape with small areas of another and this alternation may be set in a line or sequence. The Rhythm being thus established, we can put a different composition and effect of light in every area of the sequence, whether large or small. The variety of these compositions must, of course,

* Ross, *On Drawing and Painting*, p. 68–69.

be properly subordinated to the unity of the movement in which they occur. If possible the interest introduced into the Rhythm should be progressive." *

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Progression

"Besides the Sequences of Continuation and of Repetition which give us the sense of Harmony and the Sequences of Repetitions in Alternations which give us the sense of Harmony and also the sense of Rhythm, we have a third type of sequence in which we have the feeling of an orderly progress from one thing to another, either upon the principle of an arithmetical or of a geometrical progression. The sequences of this third type I shall call the Sequences of Progression.

"In Drawing and Painting these Sequences of Progression take the form of gradations leading from one tone to another, from one position, measure, shape or attitude to another, always by degrees. The changes are not only gradual but uniform in their character. They represent a certain difference or a certain multiplication. Because of the repetition or continuation of a certain change these sequences of gradation or progression have in them an element of Harmony which must be appreciated. [See Plate 30, and note the progression of the attention along the grass panel towards the pergola.] . . . It is in Art as in Nature: the order of changes is not always seen in the effect or result but it is there all the same or should be there. The changes in themselves mean variety. The order of the changes means unity." †

Balance

When we look at a picture or a view there will be certain objects in it which more than others appeal to our attention, either because they directly attract the eye in a sensory way by their brightness, or contrast, or definiteness, or because they attract us by their appeal through association. In either case there will be a tendency to look directly at the object which thus claims our attention. In a composition of several objects the mind will be satisfied only when these different attractions are balanced about the center line of the composition.

Partly at least because of the greater ease with which the eyes and the head turn sideways rather than up and down, we are more keenly sensitive in compositions to equilibrium of attention about a vertical axis than about a horizontal or other axis. There is an associational reason also for our noticing particularly equilibriums of this kind, namely, that we are familiar in the world about us with a multitude of objects whose forms are balanced about a vertical axis on account of symmetry of growth and the action of gravitation. On these accounts

* Ross, *On Drawing and Painting*, p. 70. † *Ibid.*, p. 71–72.

the term "balance" as applied to landscape composition is best used to mean equilibrium of attraction of attention about a vertical axis only.

Symmetrical Balance

This balance may consist in exact inverted repetition of everything on one side of the vertical axis by everything on the other side, so that the attention attracted by any object or part of an object on one side is equalled by the attention attracted by an exactly similar and similarly-placed object or part on the other side; this kind of balance is called symmetrical balance. (See Plate 1.) Symmetry, like symmetrical balance, is inverted similarity of parts about an axis, but the term "symmetry" refers to physical similarity of parts in relation to an axis which may lie vertically or in any other direction. A flower pot standing on its base is an example of symmetrical balance; the same flower pot lying on its side, still symmetrical about a non-vertical axis, and still physically balanced, is no longer an example of symmetrical balance because the axes of symmetry and of balance no longer coincide.

Occult Balance

Balance may also consist in a disposition of objects not similar nor similarly placed but still so chosen and arranged that the sum of the attractions on one side of the vertical axis is equaled by the sum of the attractions on the other side. This kind of balance is called unsymmetrical or occult balance. (See Plates 4 and 23.)

The distinction between symmetrical and occult balance is important because on it depends most of the compositional difference between formal and so-called informal design, between the compositional beauty of the house, the terrace, the geometrical garden, and the compositional beauty of the cliff, the brook valley, the woodland glade. Formal balance is quickly traceable to the relation of elements on which it depends. In occult balance we feel with satisfaction the stability of the composition, but only after contemplating or consciously analyzing it do we perceive the balanced relation in which the stability consists. (See the occult balance due to direction of line in Plate 17.)

Intensification of Emotion from Repetition, Sequence, and Balance

We find from experience that the perception of repetition, sequence, and balance in landscape composition causes us an immediate pleasure, an amount of pleasure which seems insufficiently explained by the repetition, sequence, and balance of muscular motion or tendency to muscular motion involved in their perception. But we should remem-

ber that the emotions associated with repetition, sequence, and balance are associated also with and often automatically expressed by repeated, sequential, or balanced muscular motions and positions of the whole body, and these in turn intensify the emotion that suggested them.* The delicately balanced nervous and muscular machinery of the body is thus in a way a reverberator for the increasing of the effect of these experiences.

Characteristics of Objects in Landscape Composition

In his actual work in design, the landscape architect is continually applying the principles of repetition, sequence, and balance in the choice and arrangement of his materials according to their characteristics, that is, according to their shape, color, and texture. In his perspective drawings and his rendered plans, he, like the painter, is dealing with compositions of lines and areas on a flat surface. These we shall discuss to some extent in the appendix to this book. In making his compositions in the objects in the outdoor world, the landscape architect is in a way handling a more complicated problem. He is modifying the position and characteristics of masses, of three-dimensional objects, to produce relations of repetition, sequence, and balance, pleasing as far as may be both in the various views that observers get of the composition as they move about in it, and in the composite idea of the constructed whole which they finally carry away. Moreover, the shape, color, and texture of the objects which the designer uses in his composition are modified in the outdoor world by effects of light and shade, of distance, of atmosphere and aërial perspective, effects which often play as dominant a rôle in the composition as do the more essential characteristics themselves.

Shape

We do not perceive shape so directly as we seem to perceive color. We learn the shape of a thing only by perceiving the relation of its parts. When we perceive a shape visually, the information which we get directly through the use of our eyes is information as to the extent of the object in two dimensions only, that is, information given us by the two-dimensional image which falls upon the retina. The actual three-dimensional shape of the object we are aware of only in so far as we can deduce it from this two-dimensional image by means of our visual and muscular and tactual memories of previous experiences.

* Cf. Chapter II, p. 13–14.

We know from experience, for instance, that a shadow of a certain shape on an object indicates that the object has a certain shape. We know that a certain amount of convergence of the eyes in looking at an object indicates that it is a certain distance away from us. Our memory of the time and labor that it took us to walk from the distant mountain gives us a measure of its distance and so of its size. This fact, that the perception of shape requires, as it were, an act of judgment on the part of the observer, makes the use of shape in landscape composition a particularly subtle thing, because the visual aspect of the shape of an object, dependent as it is on many modifying circumstances, may be something quite different from the actual physical shape of the object which might be determined, for instance, by touch or measurement.

Individuality through Shape in Landscape Composition

In a landscape composition, our attention will be attracted to an object because of its shape when that shape is easily recognizable, and it may be recognizable for several reasons. The relation of the parts which make up the shape may be so simple, so obvious, so readily understood, that the object so shaped appeals to us at once as a unified and separate entity. Or the shape may be one with which we are thoroughly familiar, and therefore it may attract our interest, because we are trained to see it, and because it has more associations in our mind. A shape may attract attention because of its unity through segregation from or contrast with the rest of the composition; for instance, a Lombardy poplar standing up among a group of willows, just as in a less degree a willow among a group of poplars. (See Plate 36, or the cypresses and stone pines in Drawing XIV, opp. p. 112.)

A shape will be orderly and may be beautiful according to the completeness of the relation of its parts in repetition or sequence or balance, and order or unity of shape so arising will, as we have said, give an object a more definite individuality and so a greater importance, a greater ability to attract attention in the composition. (See Drawing XXV, opp. p. 196.)

Shapes will have individuality in composition also as they attract attention to themselves according to ideas which they arouse in the mind. A shape may owe its interest to the fact that it expresses the work of man, as, for instance, a piece of topiary work (see Drawing VI,

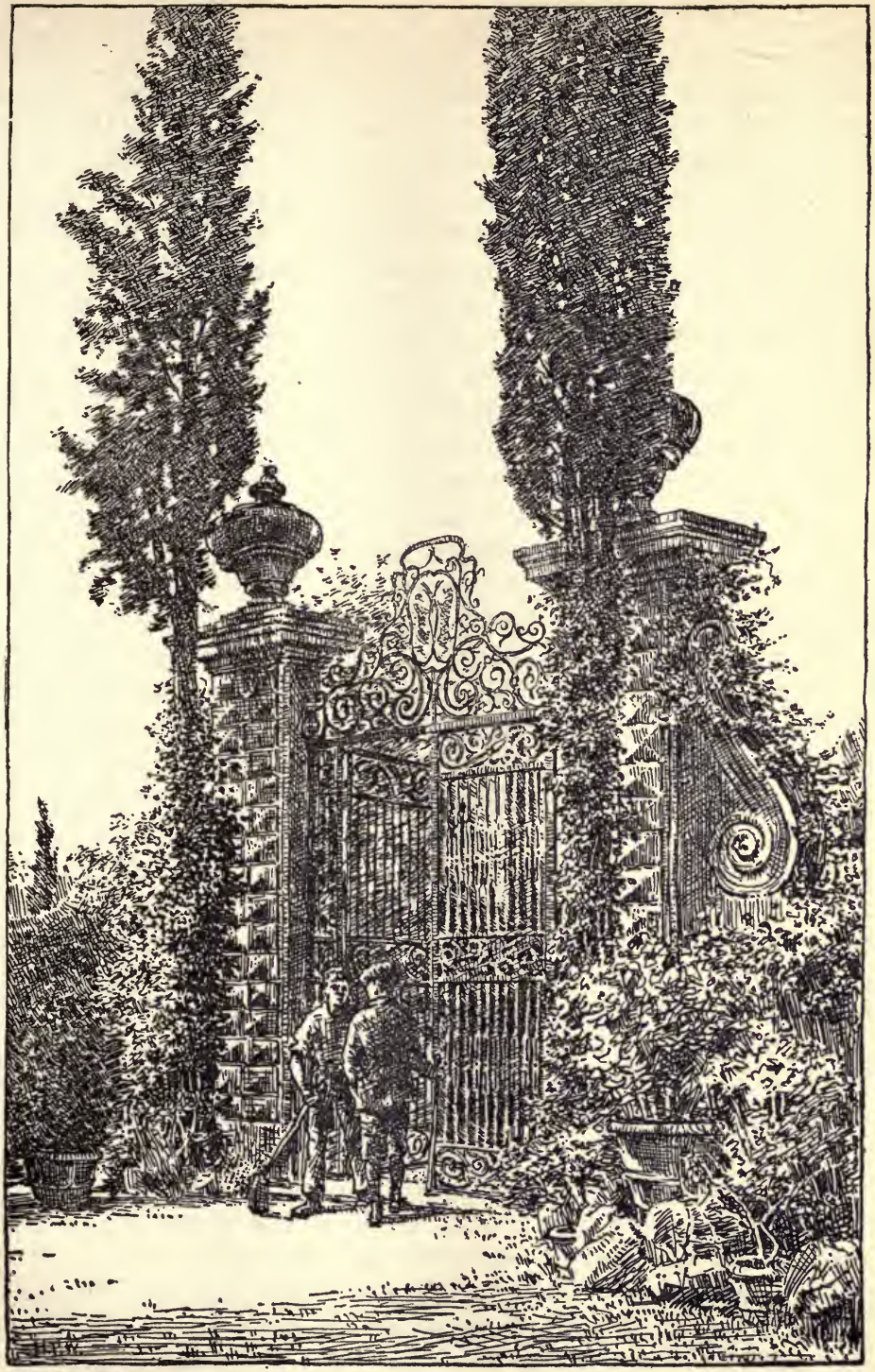
opp. p. 48), or it may be the expression of the unhindered power of nature, as the typical growth of a tree. (See Plate 9.) The shape may have interest not for itself but from something which it symbolizes or represents, for instance, a letter or a symbol like a crown in topiary work, or a statue, in which part of the interest at least is aroused by the action or the person or animal represented.

Different shapes will have different emotional effects upon the observer as they suggest different postures of his own body with their accompanying emotions. A crouching or a cramped shape, for instance, will produce quite a different effect in the observer's mind from that produced by an aspiring or expanding shape, and any one sensitive to matters of this kind will be found, when he describes shapes, expressing their emotional effect upon him by making gestures or assuming attitudes similar to the shapes which he is describing.* (Compare the difference in attitude between the pine in Plate 12 and the cypresses in Drawing XIII, opposite.)

Value of Shapes and their Arrangement in Composition

In landscape compositions, the shape relation of the various objects will largely influence the excellence of the composition entirely apart from any considerations of what the objects themselves may be. The repetition of a pyramidal shape, for instance, here in a spruce tree, there in the gable of a house, and again in a distant mountain, may give a compositional unity to a landscape. (Compare the repetition of rounded shapes in Drawing XXV, opp. p. 196.) A sequence of shapes, perhaps first a stretch of river and then a narrow strip of meadow, and then a piece of road seen in sharp perspective, may carry the eye in a certain direction to the dominant object in the composition, or perhaps offset and balance a contrary sequential effect elsewhere in the field of view. A landscape composition may be balanced by the equality of interest attracted, for instance, by the definite and sharply outlined shape of a rock on one side of the picture and perhaps a less definite though larger form made by a mass of shrubbery on the other side of the composition. Of course it is rare that our attention is held by an object purely on account of its shape, though it often is attracted for this reason. Objects once perceived are likely to hold the attention rather for some associational interest; but the shape of objects in a

* Cf. Chapter II, p. 14.



Drawing by Henry P. White

XIII

GATEWAY TO ORANGE GARDEN, VILLA PALMIERI

composition, entirely of itself, is a fundamental and unescapable factor which will affect many observers similarly, and should be studied first by the designer, however much the results of this study may be modified by the considerations of color, texture, and the infinite variety of effects from association. (See the shape composition in Plate 1.)

Size, Scale, and Distance

When we speak of the size of an object we are using merely a relative term: a thing is large or small entirely according to the standard with which it is compared. Our only direct visual perception of size consists in the size of the image of the object on the retina, and this being dependent also on the distance of the object from the observer, size, like shape, can be appreciated with any accuracy only as we bring our experience and what we have learned through other senses to bear in making deductions from our visual impressions.

Absolute and Relative Scale

We use the word scale to denote the relative size of objects. The terms absolute scale and absolute size are used in speaking of the relation of the size of any given object to a definitely designated standard, as a linear foot. Inasmuch, however, as the realizing sense which we have of any such absolute standard depends inevitably on its relation to the dimensions of our own bodies, we may say for all practical purposes that absolute scale is the relation of an object to the size of a man. Relative scale is the relative size of objects within a given composition; for example, we say that the relative scale in a Japanese garden might be similar to the relative scale in a natural Japanese landscape. The objects in the one case are absolutely very small, in the other case of normal size, but their relative size in the two cases would be somewhat the same.

Indication of Scale in Landscape Composition

In any landscape composition the absolute scale of the objects may be established by the introduction of anything which shows the height of a man. (See Plate 7 and Drawing XIII, opp. p. 100.) Men themselves are the best measuring rods, as is felt by the architect who introduces figures into his drawings for this very purpose; but more permanent objects, flights of steps, balustrades, handrails, door openings, seats and so on, which have definite sizes themselves to fit them for the use of man, will serve the same purpose. (See Plate 34.) As we have said, the apparent size of an object visually perceived depends not only on its actual size but also on its distance from the eye, and

therefore matters of scale and of distance in landscape composition are inextricably bound up together.* A series of objects of known size in a landscape serves, as does the stadia rod of the engineer, to determine the distance from the observer to various parts of the landscape; and conversely, an object at a known distance will be known to be large or small according to the size of the image in the eye of the observer. (See Drawing XI, opp. p. 82, and Plate 21.) In architectural design, this matter of scale is more completely under the control of the designer. He may repeat throughout his building or throughout his group of buildings objects of recognizably the same size, and almost inevitably this size will be definitely related to the size of a man. In landscape design, however, in those cases where architectural features are not much used, the elements of the design will not have so definite and determinable a size. Nevertheless within certain limits the landscape designer has at his disposal many objects whose size may be judged from their appearance. Some shrubs and many trees have a reasonably predictable size at maturity. Any one noticing in a New England landscape a mature sugar maple tree or an orchard of gnarled apple trees would be able to tell with some accuracy their size and consequently the size of the landscape about them, because he would know from experience that these trees attain a certain size only when they have attained such an appearance.

Effects of Perspective

This relation of our visual perceptions of size and of distance puts into the hands of the landscape designer a considerable power of modifying the apparent extent of the landscape in his design, or less frequently the apparent size of the elements in it.† By slightly diminishing the actual size of distant objects, they may thereby be made to seem more distant. By so subdividing the foreground, for instance, as to make an object seem farther away than it really is, its apparent size may be increased. What we call the laws of perspective are merely the relations which we have found to exist between the actual size, shape, and location of objects in the world and their visual appearance to an observer. That it is the appearance of things in perspective and not their

* Cf. Hugo Koch's *Der Optische Maszstab in der Gartenkunst,* in *Gartenkunst,* Feb. and Apr. 1915. (See REFERENCES.)

† Cf. Illusions, p. 120.

actual characteristics nor their location in plan nor their relation in elevation in which must lie their compositional excellence, is a fact which even the experienced designer must force himself to bear constantly in mind. As seen from a chosen definite point of view, objects may be made dominant or subordinate in the composition, may be made in effect large or small, may be led up to and enframed by other objects, purely according to their relative positions in relation to the observer. It is a fact however that diminution of size on account of distance will not subordinate an object in nature to the extent that the same diminution of size would subordinate an object in a painting. If the distant object attracts the attention at all, the eye may be focused upon it and a great deal of its detail may yet be made out. Its size may be judged by its relation in perspective and its total effect may not be so very different from what it would have been if it had been nearer to the observer.*

Texture

Texture is the result of the shape and size of parts, but of parts so small that in the aggregate they tell as a continuous surface and not as discrete parts or objects in a composition. The texture of velvet depends on the character and weave of the thread; the texture of a tree on the character and disposition of the leaves; the texture of a distant mountainside on the form of the trees which clothe it. The relation between form and texture, therefore, is merely one of scale, and any texture may be seen to be, on closer inspection, an aggregation of forms. Texture is quite as frequently perceived by feeling as by sight, and much of its usual effect lies in awakened tactual memories, as witness such common descriptive terms for texture as smooth, soft, harsh. (Compare the textures in the Frontispiece, Plate 18, Drawing XXVI, opp. p. 198, Drawing XX, opp. p. 158, and Drawing VI, opp. p. 48.)

Scale Relation of Texture to Size and Shape

There is a certain scale relation which must be preserved between

* "One of the great lessons of psychology is the importance of trifles, and when all our labour is done we may find the eye returning again and again, not to fountain or lawn or parterre, but to some object so trivial that it can be hidden by a single finger of the outstretched hand; some tiny cloud of blue which tells of a far-off mountain, some gleam of distant water half seen between the trees, or green depth of a forest glade."

Sitwell, *An Essay on the Making of Gardens*, p. 69–70.

the texture of an object and its size and shape. A distant screen plantation may be made of separate large trees, but still remain one mass. A border for a flower bed in a well-kept formal garden must be composed of small and close-growing plants, and often these plants must be clipped that the border may seem of continuous texture and not a series of individual plants.* In the materials used by the landscape architect there is the greatest possible variation in texture: from the smoothness of calm water or polished marble to the harshness of a "Spanish bayonet" or a shattered ledge; from the cloudy fineness of a smoke-tree in bloom to the coarseness of "elephant's ear" and other tropical plants. Quite apart from the effect of larger form, therefore, the interest of the beholder may be held or directed, the importance of an object in the design may be increased or diminished, purely through the effect of texture in the composition. A flower bed of various colors may be unified by the repetition of a similar texture throughout; the unity of a lawn or of a wheatfield is due to the effect of its consistency of texture of clipped turf or standing grain. The effect of distance in perspective may be increased by a sequence of textures growing finer as they recede from the observer. A clipped tree of solid texture or a plant with dark and shiny leaves may be balanced by another which through the same texture has the same ability to attract attention in the design, but in this case the balance if satisfactory is due primarily to the shape, or perhaps the color, and not wholly to the texture. A balance between two objects otherwise similar may be upset by striking variation in texture, but balance in texture alone is generally less effective than balance in shape or color.

Color

It is not in the province of this book to discuss in detail either the physics of light or the esthetic theory of color. But some of the work of the landscape architect on paper depends on color as the painter's does, and all of his work out of doors deals with colored objects, and is constantly, and often greatly, modified in its apparent color and consequent effect by changes of light and atmosphere. Usually he cannot modify his actual work, studying it and changing it on the ground until he is satisfied with the effect; therefore, he must to some extent predict the effect, knowing the conditions. A little review of some of the facts

* Cf. Chapter IX, p. 157–158.

of light and color, especially out of doors, might help him to think more clearly on the subject.

Color and Light

We give the name of light to those vibrations of the ether which are within the range of frequency capable of being perceived by the human eye. There are also ether vibrations faster and slower, but they do not affect our sense of sight. The different frequencies of vibration which we can see produce upon the eye the effect of different hues, ranging from the sensation of violet produced by the fastest visible vibrations to that of deep red produced by the slowest visible vibrations. The greater the wave height of a light of a definite wave length, and so of a definite hue, the greater will be the intensity of the hue. Light all of which has the same wave length will produce upon the eye the effect of "pure color," that is, it will be all of the same hue. The light of the sun is a mixed light, containing practically an infinite gradation of wave lengths corresponding to the gradations of frequency of vibration within the limits which we have already mentioned. Red light is the least refrangible by a prism; violet light is the most so. Placing a prism in the path of a beam of sunlight will therefore separate this mixed light into its component hues. These are practically infinite in number. For purposes of convenience, however, men have been accustomed to name only certain of these hues and to consider the others as intermediates between them. The "colors of the rainbow" are commonly spoken of as red, orange, yellow, green, blue, and violet.

When sunlight falls upon an object, it may be sent back again unchanged except in direction, as when it is reflected from the surface of a perfect mirror; or it may be dispersed in many directions from a surface like frosted silver or white paper; or it may be broken up into its constituent colors, as by a prism; or some of its constituent colors may be absorbed and the others only allowed to go on, as by a sheet of colored glass. The color of ordinary surfaces, a wash of water-color, for instance, is due to this last effect. If a surface is absolutely impervious to light, it reflects the light unchanged in color. If it is at all pervious, like paper or cloth or paint, the light penetrates and then is reflected, at different depths below the surface. And in going through the substance near the surface of any "colored" material, certain definite wave lengths of light are absorbed, and only the others allowed

to escape. In these ways different objects have different colors,* that is, they send to the eye light of certain wave lengths only, which produce the sensations of certain colors. By what physical machinery the eye perceives these colors we do not yet know with certainty. It seems to be determined, however, that our primary color sensations are red, green, violet-blue. At least it is the fact that the effect of any other colors of the spectrum may be produced upon the eye by an appropriate mixture of beams of light of these colors thrown upon a white surface. Red and green so mixed make yellow; yellow and violet-blue make white.

The effects of pigment colors are quite different. With them, the accepted primaries are red, yellow, and blue. Appropriate mixtures of pigments of these colors will produce any other color. Red and yellow make orange; orange and blue make black. The reason for this difference between pigment and spectral color lies in the physical fact which we have already pointed out, — that the color of a pigment is due to its having absorbed all the light which falls upon it except that to which it owes its color. The light sent back from a surface on which there are two pigments, therefore, is only such light as is absorbed by neither. The greater the number of different translucent pigments which are applied to a surface, therefore, the darker that surface becomes. On the other hand, the greater the number of different colored lights which shine upon a surface, the brighter it becomes. One is a subtraction, the other an addition of light.

Hue, Intensity, and Value in Color Composition

In considering color composition, we are concerned not much with colored lights as such, but rather with colored surfaces seen close together or in immediate succession. Each surface will have its own effect in the composition according as the light which is sent out from it is in any way different from that sent out from the adjoining surfaces. These differences may be of three kinds : differences of hue, differences in intensity, or richness of the hue, and differences of value, that is, differences in the strength of light-effect upon the eye. This value is relatively high in the case of white surfaces, because they send back nearly all the light that they receive. It is high in the case of surfaces

* The term color or local color of an object is commonly taken to mean the color that an object shows when illumined by white light.

of lemon-yellow and similar hues because the light which they reflect has been only slightly diminished in its illuminating effect by the absorption of that portion of the original white light which was not yellow. The value is low in the case of blue and violet, because a violet pigment, in removing the other hues, has removed nearly all the illuminating power of the light. In a black surface, in which all the mixed hues of the original light have been absorbed, value is at its lowest.

Emotional Effect of Colors

It is apparently the fact that in certain very general ways most people are affected emotionally in the same manner by the same colors.* It would appear that red and orange usually produce an exciting effect, green a soothing effect, bluish purple a depressing effect. The fact however that it is almost if not quite impossible to eliminate from any experiments the effect of the size and shape of the colored areas observed and various associational results of the colors, makes the data which we have in this direction still uncertain in its value in color-design.

Color Harmony

It is a fact of every-day experience that, to almost all observers, certain colors, when applied to juxtaposed surfaces, produce a pleasing effect, and certain others, similarly juxtaposed, produce an unpleasing effect. What are all the physical and psychological causes of these facts, we do not as yet know, but as to what combinations of colors are pleasing and what displeasing, we have a great amount of testimony of the best possible kind, namely, such of the paintings of all the masters of color as have been preserved to us since the beginning of art. It is possible by a careful study and comparison of these, by careful consideration of what color combinations are pleasing to us and to those whose opinion we know, to make definite empirical statements in this regard which are of very great value to us when using color in design.

The colors as they appear in the spectrum are a sequence, passing by degrees from one distinguishable color to the next. There is no spectral color of violet-red or red-violet, intermediate between the violet of one end of the spectrum and the red of the other end. Al-

* The reader is referred to the description and analysis of experiments given in an article by Newton A. Wells, entitled *A Description of the Affective Character of the Colors of the Spectrum*, in *The Psychological Bulletin*, June 15, 1910, vol. 7, p. 181–195.

though the colors of the spectrum cannot be exactly matched by pigments, they can be approximately imitated, and when the more commonly recognized colors — red, orange, yellow, green, blue, and violet — are arranged in this order, proper mixtures of any two contiguous colors will produce a series of colors intermediate between these two. Moreover, mixtures of violet and red will produce similar intermediates between these two colors, not found in the spectrum; and thus pigment colors may be arranged in a closed circuit, passing through the whole sequence of color by as many gradual transitions as we may desire.

If pigment colors are thus arranged in a circle, properly spaced, all of the same value and of the same intensity, it will be found that a mixture of pigments of colors diametrically opposite on the circle — for instance, violet and yellow, or red and green — will in every case produce a neutral color. Such pairs of colors are called complementary. A neutral color will similarly be produced by mixing all the colors together, or by mixing any number of colors which are symmetrically disposed about the circle, as for instance, violet, orange, and green.

Experience shows that juxtapositions in composition of two approximately complementary * colors, or of three or six or any number of colors taken nearly symmetrically about the color circle, are likely to be pleasing. Why this is so we cannot tell, though it may be conjectured that the pleasure is related in some way to the complete or balanced appeal, so to speak, which colors so chosen might make to the fundamental sensitiveness of our perceptive apparatus to red, green, and violet-blue. In any case the pleasure of color is so much modified and complicated in practice by the size and shape of the colored objects, that it is extremely difficult, as we have said, to determine just how much of the observed effect is due to the color alone. We may say, however, using the two latter terms rather metaphorically, that pleasure from colors in composition will come from color harmony, color balance, or color rhythm.†

* Cf. *Experiments on the Æsthetic of Light and Colour. On Combinations of Two Colours*, by Emma S. Baker, in *University of Toronto Studies, Psychological Series*, vol. 1, 1900, p. 201–249.

† Cf. Dr. Denman W. Ross, *A Theory of Pure Design.* Boston, Houghton, Mifflin & Co., 1907.

If two or more objects are to be harmonious in color, they must have some color-characteristics in common. They must be similar in value, or similar in hue, or similar in intensity. If they are to avoid monotony, they must of course, being similar in one or two of these characteristics, be agreeably different in some other.

A composition of colored areas may be made harmonious in color, then, in three simple ways. All the colors may be made to contain some admixture of some one chosen hue, — all the colors having a yellow tinge for instance. The result of carrying this to the extreme would be that all objects in the composition would be of the same hue, an achievement of harmony but also very possibly of monotony.

All the colors may be made to have the same value, that is, to appear to send the same amount of light to the eye per unit area of surface. When dealing with pigment-colored areas, and choosing any value higher than black and lower than white, all the colors may be made to have this value by the proper admixture of black or white as the case may require. If the values be all absolutely the same, the resultant harmony may be monotonous.

All the colors may be made to have a similar intensity. Since the maximum intensity of different pigment colors occurs at different values,* changing the intensity of a color by adding more of the same color, so to speak, will probably change its value as well. If the value be kept the same, the intensity can still be changed by an admixture of gray of the same value. This process applied to several colors would tend to produce a harmony something like that of the first case which we have just discussed, a harmony of hue, by toning the whole composition toward a uniform gray.

Colored areas may be pleasantly related in the same composition, also, not because of harmony through a similarity in hue, or value, or intensity, but because of an equal amount of difference between each tone and the ground tone on which they all lie. This difference may be a difference of hue, — for instance, two spots, one of green and one of orange, on a ground tone of yellow. It may be a difference of value, — for instance, one spot of dark green and one of light green on a ground tone of red of a middle value. It may be a difference of in-

* Cf. p. 106–107.

tensity, — as a spot of intense red and a spot of much neutralized red on a ground tone of red of a middle intensity. Differences of intensity are so intimately connected with differences of hue and of value, however, that it is seldom that objects are differentiated by differences of intensity of color alone, unaffected by value and hue also. This relation of two colored areas through the same amount of color difference from the ground tone may be called, somewhat metaphorically, color balance. The total balance of the composition can never be independent of the size and shape of the areas, however, as we have seen. A composition will have special balance due to color, for instance, when two objects on opposite sides of the axis of balance attract the attention equally through their contrast, in hue, value, or intensity, with their surroundings. In this way a balance might exist on a neutral background of middle value between a small object of a high value and intense color and a large object of a low value and less intense color. This balance is plainly at bottom a balance of attention.

Several colored areas in a sequence may be pleasantly related because there is a progressive and ordered difference from each to the next, in value or hue or intensity, which leads the attention in a definite direction. The direction of the attention will be towards the end of the sequence which makes the greatest contrast with the background. A neutral wash running from light to dark on a white surface, for instance, is unified by its consistent change of value from end to end, and the attention is drawn to the dark end, where the contrast with the background is the greatest. Such relation of colored areas may be called color rhythm. It is necessarily dependent on spacial relation, however, and is practically an example of space rhythm in which the attention is carried along from object to object not by size, shape, attitude, and so on, but by change of color and increase of color contrast.

Color in Landscape Composition

The landscape architect must always deal with the question of color in his designs. He makes decorative arrangements of the brilliant color masses of his flowers with the different colors of his walks and walls and structures of painted wood, and he uses both the orange and crimson and purple of deciduous trees in the fall, and the subtler variations of color of summer foliage. Even in its summer guise the har-

mony of foliage color is worthy of the designer's best attention.* He finds himself committed to a study in greens, but, within the limits of this color the possible variations in intensity, in value, and in the admixture of other hues give him ample ability of differentiation of the various parts of his design, either in a scene where the foliage is merely a pleasantly varied enframement of the brilliant color of the flowers, or where, in a landscape all foliage and sky, the delicate distinctions of grayer and browner tones of green may tell for themselves at their full worth. Where gray and misty days are frequent, the landscape architect might plan some portion of his scheme purposely to accent the effect of the atmosphere by a gray and delicate consistency of values. In such an atmosphere, too, subtle contrasts of color would be more easily perceived. When a bright sun throws the landscape architect's work into sharp contrasts of light and shadow, a harmony of values in local color would not be particularly effective. Under tropical skies, scenes can be found of almost unbelievable brilliance of color, consistent in their harmony of intensity, in a high key, as the artist looks at them, but often garish and unpleasant when, translated into pigments, they are seen among the subdued colors of his studio.

Light and Shade

Through thousand-times repeated experience, we have each of us learned to know the appearance which most objects present when light falls upon them. We have learned the sharp-angled arrangement of lights and shadows which represents a cube in sunshine. We can tell with surprising accuracy from the form of delicate gradation of shade whether or not a certain column is truly cylindrical. Our knowledge of shade and shadow is thus of great service to us in interpreting the information of our eyes into three-dimensional form; and the minor forms which tell in the aggregate as texture are interpreted in a similar way. The smoothness of rubbed sandstone, the comparative roughness of a clipped hedge, are revealed to the eye by their play of little lights and shadows almost as surely as they might be revealed by touch to the hand.

Light and Shade Unity in Landscape Composition

This effect of light and shade upon the surface of objects, and the falling of a shadow of one object upon the face of another, bears in another way also a very important part in the appearance of the various

* Cf. Chapter IX, p. 159–160.

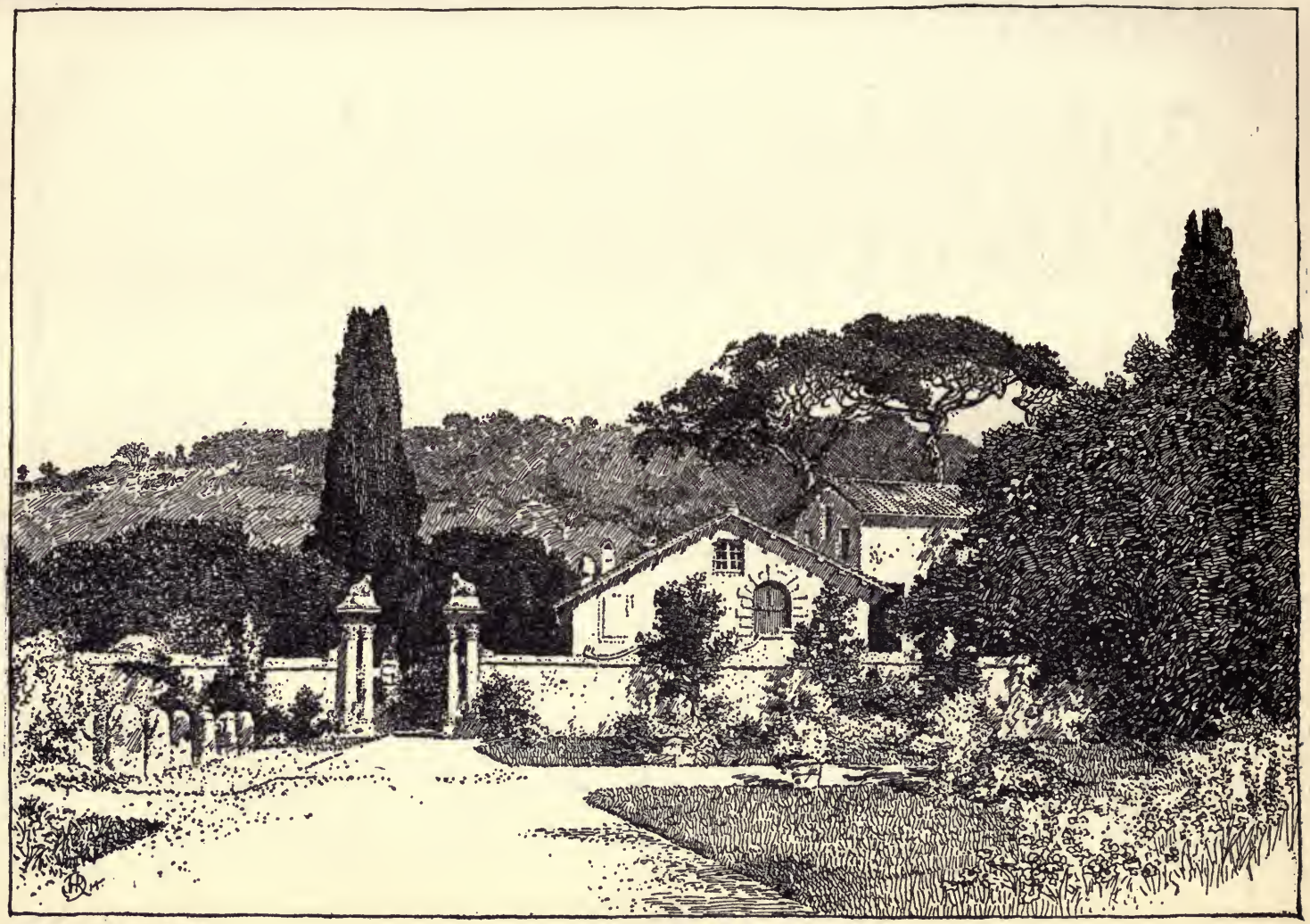
scenes which we behold. The masses of light and dark which are formed by the shadows assume of themselves, through their contrast of value, great importance as visual units in the design. Properly arranged, they may coöperate with the actual forms, enhance them and lead the attention to where it should lie in the composition, as, for instance, where a statue, perhaps somewhat insignificant in size, is made sufficient for its place at the end of a vista by standing in a blaze of sunlight against a background of shadowy green. On the other hand, an ill-considered falling of the shadows may not only confuse the effect of mass relations designed to play definite parts in the composition, overlaying and cutting up designed form with shadow form, but also may create false and unlooked for points of interest, directing the attention quite otherwise than as the designer intended. Shadows may be definitely designed to serve as units in a composition. A great shadow may fall upon the foreground lawn, enframing and setting off the more distant sunny landscape. (See Plate 21.) The shadows of a number of trees in vanishing perspective may diversify and give scale to an area of grassland, or the netted shadow of the winter branches of a tree may very pleasantly decorate the bare wall of a building. Or it may be that instead of falling in broad areas, breaking the landscape into large and restful masses, the shadows may fall in a scintillation of light and dark, pleasantly flecking the ground under the trees, moving in the wind and giving to the whole scene a certain effect of delicacy and gayety. (See Plate 19.)

It is often desirable to have in a design some area the very purpose of which shall be that it is a place of shade; or another place of open greensward and brilliant flowers may be designed to be at its best only in the full blaze of the sun. This subdivision of design into units of sun and units of shadow was well understood by the Italians,* dwelling in a climate where the sun is unusually brilliant and the shade correspondingly precious.

Variability of Light and Shade

As the sun moves through the sky throughout the day, the shadows change and fall differently, and different objects in the design may emerge from the obscurity of shadow to a temporary importance of sunshine and sink again to shadow. And the shadows themselves, long

* Cf. Chapter IV, p. 41.



Drawing by Hubert G. Ripley

THE INNER COURT, VILLA FALCONIERI

and important in the early morning, creep close to the bases of the trees at noon to stretch themselves peacefully across the lawn again as the sun sets. The long shadows are likely to be the most interesting in a composition: certainly they do most to display the modeling of the objects on which they fall, and particularly to show the delicate gradations of rolling lawns or more distant and larger landscapes. Often, since the designer may not have a perfect picture at all times of the day, he chooses the later hours when, too, the owners of a place or the frequenters of a park are most likely to have the leisure to enjoy the scene, to produce his most complete composition, using the afternoon shadows as important elements in the design. When, in late afternoon, objects in the landscape are seen against the sunset sky, with their shadow side toward the spectator, and still more, in twilight when the modeling of the individual objects is no longer brought out by the direct sunlight, the landscape falls into its main and simple masses, and its pictorial composition is often best observed.*

Atmosphere and Atmospheric Perspective

The light which falls on the surface of the earth and which, reflected thence to our eyes, enables us to see the objects in a landscape, must of course pass through the atmosphere in going from the sun to any object and from that object to us. Even the clearest atmosphere has in suspension in it very m nute particles of water and perhaps of dust. When the mixed light of the sun goes through this atmosphere, the blue rays, being of shorter wave length, are more abundantly reflected from these minute particles, and the finer the particles the more nearly will this reflected light approach to a pure blue. This accounts for the

* "In fact, twilight does, what an improver ought to do: it connects what was before scattered; it fills up staring, meagre vacancies; it destroys edginess; and by giving shadow as well as light to water, at once increases both its brilliancy and softness. It must, however, be observed, that twilight, while it takes off the edginess of those objects which are *below* the horizon, more sensibly marks the outline of those which are *above* it, and opposed to the sky; and consequently discovers the defects, as well as the beauties of their forms. From this circumstance improvers may learn a very useful lesson, that the outline against the sky should be particularly attended to, so that nothing lumpy, meagre, or discordant should be there; for at all times, in such a situation, the form is made out, but most of all when twilight has melted the other parts together."

Price, *Essays on the Picturesque*, 1810, v. 1, p. 153.

blue of the sky, or of a cloud of smoke. Some of the blue being reflected, the remaining light, which goes through the atmosphere, has relatively more of the hues more or less complementary to blue, that is, the reds and yellows. And these colors will increase in intensity as the sun nears the horizon and as, consequently, its rays travel for a greater distance through the earth's atmosphere and particularly through its lower layers where the minute reflecting particles are most abundant. This accounts for the colors of sunrise and sunset. The larger the particles in the atmosphere, however, the more will they reflect light of all colors, until in the case of a fog, a cloud, a snowstorm, the light which they reflect is practically the same in hue as the light which they receive.

The same modifications will occur in the light which comes to our eyes from the objects in a landscape. When a sun-illumined object is near the observer so that the effect of the atmosphere between the object and the eye is not noticeable, the portions of the object which are in sunshine will show their local color * modified only by the color of the sunlight as it is under the atmospheric conditions of the particular case. The portions of the object which are in shade or shadow will show their local color modified by the color of the light with which they are illumined. This must be reflected light. If it proceeds from the open sky it will be, as we have seen, blue, and the local color of the object in shadow will be modified accordingly.† If it is reflected from surrounding colored objects, it will partake of their color in each case and the color of the object in the shadow will be that which its local color enables it to reflect from the colored light which it receives. When a considerable extent of sun-illumined atmosphere intervenes between the observer and the object, these conditions are modified. The light which the object itself reflects from its sun-illumined and from its shadowed parts comes to the eye mixed with and noticeably modified

* See footnote, p. 106.

† "The shadows of verdure always approximate to blue, and so it is with every shadow of every other thing, and they tend to this colour more entirely when they are further distant from the eye, and less in proportion as they are nearer."

Leonardo da Vinci's *Note-books*. Arranged and rendered into English with Introductions by Edward McCurdy. From section, Of the Shadows of Verdure, p. 244.

by all the light which is reflected to the eye by the minute particles in the atmosphere lying between the eye and the object. It is true that these particles prevent some portion of the light from the object from reaching the eye; but it is evident that, in the case of the shadowed portion of an object, the light which these particles contribute through reflection from the sun is more than that which they stop off on its way from the object to the eye. Consequently the farther an object is from the eye, the lighter and usually the bluer will its shadowed parts appear. It is evident that the illuminated parts of a distant object will likewise be apparently changed to a bluer tinge with distance. Whether they also become lighter or slightly darker with distance will depend on their local color and upon whether the reflecting particles in the air are water, which sends much light to the eye, or dust or smoke, which send less. Generally it can be said that as an object recedes from the eye, its shadows become lighter, the contrasts between its shadows and lights become less, its color becomes bluer, until finally, like a very distant mountain, it seems to be almost of the color and brightness of the sky. If its local color be warm, it will apparently be changed toward a color nearer to blue in the spectrum, and it will probably be somewhat neutralized in color. If it be already a cold color, this color will still be modified towards blue, though in a less noticeable degree, and it will probably be intensified.

Atmospheric Perspective as a Consideration in Landscape Composition

This modification of the color and value of objects by distance is called atmospheric or aërial perspective. Where the atmosphere is well filled with moisture, as for instance in England, this effect of atmospheric perspective is an extremely important one, not only in the larger landscapes, but even at times in those of relatively small size. It arranges the various parts of the view in a sequence of planes of distance; it subdues the more distant detail and simplifies the distant masses; and so it not only organizes the whole composition and accents the more pictorially important attributes of the elements in it (see Plates 23 and 28), but it gives an effect of mystery (see again Plate 20), a chance for play of imagination, which may lend an air of distinction and charm to a scene which in the crystal atmosphere of a Colorado summer might appear sordid and full of incongruous detail. Aërial perspective thus gives a means of judging the relative distances of objects in a view. It

will however require some acquaintance with local atmospheric conditions before one may trust conclusions drawn in this way.

It is exceptionally possible in larger landscape designs to create an appearance of somewhat more distance than actually exists by making the local color of the more distant objects in the composition bluer. It must of course be borne in mind that corresponding changes in texture and size will probably also be necessary if the effect is to be consistent. In landscape painting and in the rendered perspectives of the landscape architect an understanding of the principles of aërial perspective will give a most desirable power to suggest the different distances of different objects from the eye. Indeed without this knowledge it is quite impossible to produce a colored representation of a landscape bearing anything more than a diagrammatic similarity to the scene which it depicts. In representing a naturalistic landscape the effects of aërial perspective are particularly important because the draftsman has not the aid, as he has in architectural drawings, of a suggestion of relative distance by the convergence of lines known to be parallel, or of the same suggestion through the pictorially different sizes of objects known to be in reality of the same size.

Illusions in Composition

As we have seen,* our perception of the objects about us is not a complete and final process, but consists rather in inferring and deducing ideas about these objects from their appearance, that is, from the data which our senses give us, data in most cases insufficient and capable of misinterpretation. The designer is always concerned, therefore, with the appearance of his design, and he modifies its characteristics having in mind their effect on this appearance.† Usually the designer intends that the objects in his design shall be what they appear to be, either because this is necessary for some economic reason or because they are subject to such inspection that any deceit would be soon discovered. There are occasions, however, where the designer may deliberately lead observers to draw false conclusions from what they see. These illusions may range all the way from such deceptions‡ as imitating

* See Chapter II, p. 7.

† Cf. Optical Effects, Part III, Chapter II of J. V. Van Pelt's *The Essentials of Composition as Applied to Art*, new edition 1913, p. 118–151.

‡ Cf. Chapter II, Logical Unity, p. 17.

a stone balustrade with painted tin, or painting windows on the blank wall of a house, to such effects as concealing the end of an artificial lake or stream that it may appear to have greater extent, or constructing a pool of semi-elliptical shape that it may appear in a certain aspect semi-circular.* Illusions, being the result of a false deduction by the observer from the given premises, become increasingly easy to bring about as the deduction is complicated and indirect. Texture being very directly perceived is not readily made to appear other than it really is. The color of one object can be, to be sure, modified in its appearance by the juxtaposition of other colors, but, in the main, color in itself, like texture and for the same reason, does not lend itself to illusion. Three-dimensional shape, however, which requires for its perception a more complicated process, can often be used to produce an effect upon the observer which would not at all be borne out by the actual facts on more careful examination; and in matters of association — a still more complicated and in some ways less predictable mental reaction — the observer may often still more readily be induced to come to incorrect conclusions.

The first test of a successful illusion is of course that it is not discovered. The effect on the observer is then exactly as though he had actually seen what he thinks he sees. The discovery of the illusion, however, will in certain cases give him intellectual displeasure which will more than offset whatever esthetic pleasure he may have had from the undiscovered deceit. This intellectual displeasure arises in those cases where an object supposed to be of some appropriate material is discovered to be of an inappropriate material, as where a supposed bronze statue decorating a garden is found to be of painted plaster. The displeasure arises also where a form apparently serving some function proves to be incapable of serving it, as for instance where what looks like a gateway at the end of a path proves to offer no means of entrance, or where what is supposed to be a wall of a garden house proves to be merely a bit of stage scenery with no building behind it. In both these cases, the intellectual displeasure of the observer comes

*In connection with this section, read *Note-taking in Italian Gardens. Villa Gamberaia*, by H. V. Hubbard, in *Landscape Architecture*, Jan. 1915, v. 5, p. 57–66, with plans and drawings.

partly from the incompleteness and incongruity which he perceives when he knows the real facts, — an incongruity made the more striking by the previous false conclusion which he had drawn, — and partly from the sense of having been duped, of having been expected to accept a poor thing for a good one.

In certain other cases no intellectual displeasure follows the discovery of the illusion. This is true where, for instance, forms supposed to be square or circular have been distorted for their effect in perspective, or where what gives the effect of a continuous straight axis of design proves on closer inspection to be broken at a point where it is impossible to see both parts of the line at once.* Here, though the reality is different from the appearance, it is no less good. In such cases as this the discovery of the illusion may indeed be a source of added pleasure to the observer, pleasure perhaps in his own cleverness in having made the discovery, pleasure certainly in the cleverness of the designer and the skill of his adaptation of means to ends to produce a good effect apparently precluded by the circumstances.

Illusions of Material

One of the commonest attempts to make one material look like another in outdoor construction is the facing of a brick or other wall with cement stucco and the drawing of lines in this stucco to represent stone joints. This is often at its worst when the lines are supposed to imitate random rubble masonry, but it is usually bad because it is not a successful imitation. If the lines be drawn so that they suggest a reasonable stone-jointing and make a pleasant texture in scale with the wall, they need not be bad, though something straightforward would usually be better. Another way in which the effect of one material is imitated in a different material is our method of construction now so frequently used, of building a wall of concrete blocks cast in a mold so that their faces are supposed to resemble a rough-pointed stone surface. This need not be bad, but it often is so, again because the imitation is not successful; the concrete often comes from the mold with rounded edges not at all like those of a roughly cut stone, and when only a few different molds are used the frequent repetition of exactly the same supposedly accidental form of surface becomes evident and absurd.

* Cf. Isola Bella, mentioned on p. 120.

Decorative details of all kinds, particularly those which are repeated, are of course much more cheaply cast in cement concrete than they are carved in stone. Mechanical difficulties prevent the casting of very sharp edges or very delicate forms in concrete, and the surface of the concrete as it comes from the mold is of a rather unpleasant texture, certainly not to be mistaken for any other material. Such decoration, then, when used to imitate stone, is likely to have the double disadvantage of not being a convincing imitation and of not being in itself as beautiful in form or texture as the stone would be. These objections apply, however, only to poor imitations of stone by concrete. Cement concrete, handled with proper consideration of its advantages and limitations, whether used in separately cast blocks or in masses cast in place, is a material which holds out special attractions of cheapness, permanence, and beauty to the landscape architect.*

Where a balustrade is a purely decorative feature, where for instance it crowns a building, the use of copper in the form of stone has considerable excuse: it fulfills its esthetic function as a form well enough, it is cheaper, lighter, sufficiently permanent, and it has no economic use to which its flimsiness would render it unsuited. A similar balustrade on a terrace, where people could see it close at hand and touch it, would certainly be displeasing because its evident hollowness and lightness would unfit it, or seem to unfit it, for the practical purpose which it is there to serve. The use of wooden columns, or wooden balusters, of forms more properly applicable to stone, is less a matter of any attempted illusion than one of a design relation which is likely to be unpleasant between one material and a form typically associated with another.

Illusions of Shape

There are many cases in which the skillful designer who is intent upon the beautiful appearance of his design will construct shapes which are surprising when accurately shown on plan.† It is often desirable, particularly in the case of pools which reflect an object beyond them, to elongate the dimension of some unit of the ground parallel to the line of sight of the observer in order that this unit may occupy sufficient space in the view. Within limits and under the proper circum-

* Cf. Chapter X, p. 205.

† See footnote reference to article on Villa Gamberaia, p. 117.

stances, circles may be turned into ellipses in this way, squares made oblongs, without the deviation from the simpler form being apparent.

Where a formal grove, a wall or gate, even a building stands between one open area and another, the best development of the shapes of the open areas may produce a distorted shape of the intervening mass. In the case of the grove, this may of course readily be managed. In the case, however, of so definite things as buildings and even gateposts, many instances can be found, particularly in Italian work, of excellent effects produced by curiously distorted shapes, which can be known to be distorted only by measurement, since from no one place can the two unrelated sides be seen at the same time. It is extremely difficult to judge whether two straight lines upon the ground are exactly parallel, if they are nearly so and converging in perspective. It is, if anything, still more difficult to judge whether one line meets another at right angles on the ground, unless one line is carried by the junction point so that the eye may judge the similarity of the two supplementary angles. It is therefore easy with proper precautions to construct a garden or other formal design which shall appear to be symmetrical and rectangular while really being neither. If a comparison of the measurements which might betray the deceit is skillfully made impossible or difficult, the departure of the total shape from symmetry may be very great without being noticed. In part this is due to the fact that a man is very likely to take it for granted that a formal scheme is symmetrical and rectangular, and only some striking discrepancy will call a contrary fact to his attention. One out of many notable instances of this is at Isola Bella, in the break in the direction of the axis of the scheme on the stairway, which is so arranged that no comparison of the direction of the two lines can be made. The change of direction is about seventeen degrees, but almost every one assumes that the whole scheme lies upon one axis.

Illusions of Size

It is possible therefore by slightly converging the boundary lines of a garden, perhaps by making paths somewhat smaller at a distance than they are near at hand, to give an exaggerated appearance of length to a garden through its apparently great diminution in perspective. A similar exaggeration of the effect of size may be brought about in informal design by using trees in the distance which, while apparently

full grown, are really smaller than might be expected. This effect of size may also be heightened by false aërial perspective, to which we have already referred.* Of course the application of this sort of refinement is limited, and could readily be carried to an unprofitable extreme.

Illusions of Character

In naturalistic design it normally happens that in any given important view the designer does what he can to enhance the character of the pond or valley or other small naturalistic unit which forms the principal part of the particular scene.† Sometimes, by judicious screening out of incongruous elements and careful concentration of attention on those elements which are of the character intended to be brought out, a special character may be given to a scene as beheld from a certain point of view, although it would be readily seen from other points of view that this was not the real character of the region in question. For instance, a small stream of water, carried elsewhere in a ditch or pipe, might be expanded in the middle distance of a certain view to resemble a shallow, sluggish natural stream. A pond which for purposes of water supply had its level raised artificially higher than some of the surrounding country might be made to appear much more natural by so arranging the views that the retaining banks were concealed by foliage, and the pond itself was approached and seen only from land higher than its own surface. The desirability of this kind of effect will depend on how successful it is when seen from the chosen viewpoint, and on whether the occasions are so few as to be negligible on which it will be seen from some position which betrays its artificiality.

Associational Illusions

The effects which landscapes have through association may be increased by suggesting to the mind associations which are interesting and congruous but not properly belonging to the particular scene. This was carried to an absurd degree in the time of the Romanticists, when false ruins were built, and ruined forts and the tombs of imaginary heroes were placed in the landscape for their sentimental effect. In naturalistic design a somewhat similar although much more desirable thing is done where a low hill is made to appear much higher than it really is by planting upon it dwarfed trees and Alpine vegetation which the mind naturally associates with much greater elevations.‡

* Page 116. † Cf. Chapter V, p. 71.

‡ Cf. Chapter IX, p. 166.

Here again the line between the deliberate creation of a false impression and the reasonable enhancement of existing natural character is a fine one, and not always easy or profitable to draw.

Landscape Compositions

As we have already seen, a landscape architect in determining the esthetic effects of a composition considers first what its pictorial effect will be upon an observer from a given position. Of course in his actual construction of his design he is inevitably concerned with the location of his objects in three dimensions, but since it is mainly through the two-dimensional picture or series of pictures which the eye receives that the actual objects may be perceived, it is mainly by the beauty perceived and inferred through these pictures that the esthetic excellence of the actual work will be judged. Where the designer is creating a definitely unified object like a formal inclosed garden or like a shrub-and-tree-surrounded lawn, he may trust the observer to walk about in it, to receive many visual impressions from it, and at length to acquire from them all some definite idea of the unity and beauty of the whole. Even in such a case, however, there will be certain views which are particularly attractive, particularly characteristic, and the designer will do what he can to impress these upon the observer to the comparative neglect of other views less effective. In an informal or a naturalistic landscape, not having any geometrical total unity of shape to be understood by walking through it and observing it, but having on the contrary a total unity of character, or a certain definite characteristic sort of beauty, this character or beauty will be perceived at its best in certain views, and will appear to less advantage in others, and it will be necessary for the designer to work out with care the two-dimensional pictorial aspect of his design as seen from these important viewpoints and to do everything that he can to lead the spectators to enjoy his work from these viewpoints, and to judge its character and its excellence by these selected views seen in an effective sequence.

In most of the landscape architect's designs, which consist of a number of separate units each serving its own purpose, economic or esthetic — like the various parts of a country estate, for instance — the pictorial compositions will be obtained in the ways just mentioned. Some views will be comprised entirely within some one portion of the



Drawing by Henry P. White

ST. PETER'S, ROME, FROM OUTSIDE THE CITY

design, like a view in a forecourt, in a garden, within a lawn; other views may lie across several units of this kind, and perhaps include foliage masses outside the property and terminate on a distant mountain. The pictorial unity of these two kinds of views is essentially the same. The first kind, however, may be represented, or at least suggested for study, on the plan of the grounds; the second kind can be studied, as it can be seen, only on the ground itself.

Typical Kinds of Pictorial Compositions

There is obviously no limit to the variety of different landscape compositions. The essential of a landscape composition, as we have seen,* is some unified appeal to the attention throughout the objects forming the composition, which makes them seem to the observer to form one whole and thereby — to some extent at least — segregates that whole from the rest of the world. The arrangements of objects in a view which may produce this unified effect may be thought of as being of three typically different kinds.

The compositional effect may be produced by a single thing looked at, like a specimen tree or an isolated fountain (see Tailpiece on p. 294), or by a unified group of things looked at, for instance, a unified group of contiguous trees on a lawn.

The compositional effect may be produced by a number of things physically separated, but evincing such great unity in appearance or related position that attention falls rather upon this unifying relation than upon the objects themselves, for instance a formal arrangement of four cypress trees about a pool, or a grouping of red cedars and gray bowlders in a New England pasture, or a unified group of mountain peaks. (See Frontispiece.)

The compositional effect may be produced by a hollow thing looked into, such a thing as a walled garden, a shrub-bordered lawn, or a cliff-encircled mountain tarn. (See Plates 6, 8, and 30, and Drawing I, opp. p. 26.)

In the first case, the single object may attract the attention simply because it is so interesting in itself, and although other objects are physically present in the view, their effect is negligible in the composition. Indeed with the single object in the first case or with the unified composition of objects discussed in the second case, there may

* Page 89.

actually be also inclosing and enframing, foreground or background, objects, but if they do nothing but concentrate the attention upon the main object or composition of objects, still the whole composition remains in effect typically of the first or second kind, as the case may be.

In the third case, the hollow object looked into may, in its turn, surround a single object or a composition of objects; but if these objects merely diversify the open space without attracting any particular consideration to themselves, the composition remains typically of the third kind.

In actual practice it is seldom that a given view is a pure example of any one of these types, — indeed a view may impress the observer as one or another according as his attention happens to fall.

The pictorial landscape compositions which we have been discussing are often very definite and very powerful in their esthetic effect, but, as we have seen, the effect of the same scene may be greatly different upon different observers, and essentially the same compositional effect may be produced by very different scenes. It comes about from this that we have practically no specific names denoting arrangements of objects by their compositional effect,* indeed in all the literature of landscape design we have really only one word of this kind, namely, the word vista. It is not surprising that the vista should be thus differentiated, for it is perhaps of all landscape compositions the most unified. For this reason we may discuss it here as a typical example of a pictorial composition.

The Vista as a Typical Example

The unity of the vista consists in the dominance of the focal point, and this point is made important in almost every possible way. It is enframed pictorially by the balanced subordinate masses which inclose the vista, and these masses screen all other objects out from the composition. The bounding lines of these enframing masses converge upon the focal point, and a sequence of attention follows their vanishing straight lines or their masses diminishing in perspective toward the focal point. In association, the open space of the vista allows — or at least suggests — that the spectator go toward the focal point as an

* Cf. Hirschfeld's remarks on the difficulty of finding names for different parts of the landscape, in his *Théorie de l'Art des Jardins*, 1779, v. 1, p. 215–216. (See REFERENCES.)

important object worthy of closer inspection. The formal allée gives all these effects more definitely, more obviously (see again Drawing I, opp. p. 26), but a vista between natural tree masses or ground forms may produce the same essential effect. (See Plate 21.)

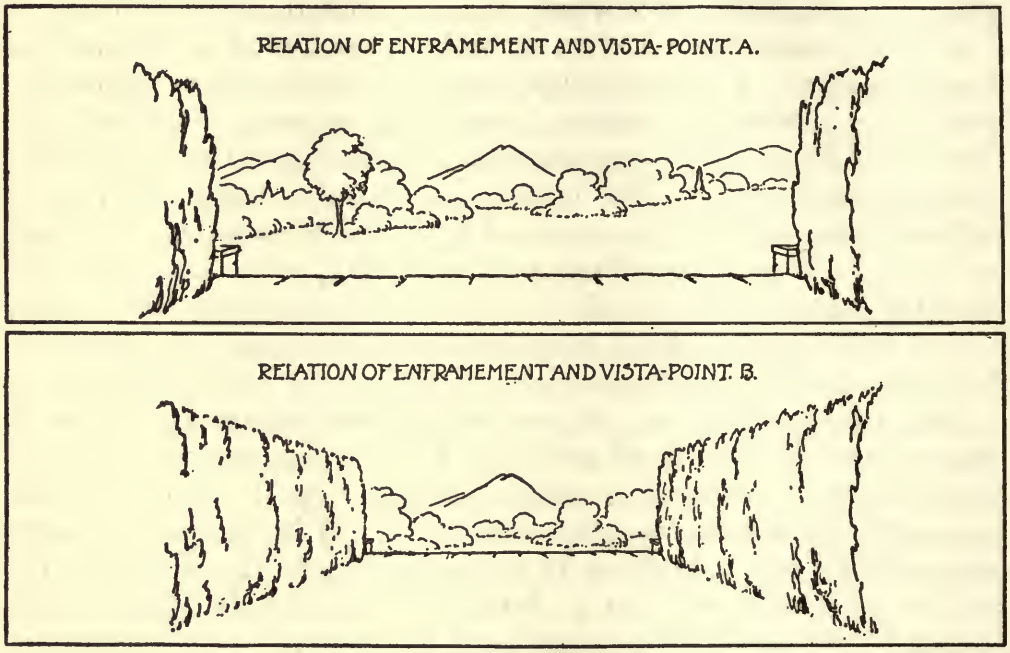
The focal point, which is treated as being so essentially dominant, must be worthy of this dominance. (See Drawing IX, opp. p. 78, and Drawing XV, opp. p. 122.) Exceptionally, this "point" may be merely an opening, the bright spot where a shaded allée stops on the brink of a declivity commanding a view, or where a wood-road comes out into a sunlit pasture. Such an arrangement, however, is seldom thoroughly satisfactory. Merely a vacuity is not likely to seem a sufficient termination. Where such a composition occurs, it is often desirable to introduce some object — for instance, a shelter — which serves as a sufficient terminus for the vista and from which the open view may be enjoyed. If an object closes a vista, usually, as we have said, it is desirable that this object shall be worthy of inspection at close range, as well as being in its main mass sufficient for its effect in the vista. A statue, a niche, a fountain, a shelter, is likely to be a successful feature in such a composition, — a shelter perhaps particularly so, because it suggests the desirability of going to it. A great tree in a distant landscape may serve, as a mountain does,* as a sufficient focal point, although one has no great desire to go to it; but in a smaller composition a tree is likely to be a poor focal point, because, however well its mass may serve at a distance, it can hardly offer interest enough in the details of its trunk near at hand to repay a close approach. A better arrangement will usually be to use as a focal point a shelter, or arch, or seat, according to the scale and conditions of the case, grouped with the tree and overarched, shaded, and dignified by it.

Where the focal point is distant and perhaps seen across a considerable intervening open space from the end of the vista, as for instance where a distant hill is thus looked at, it may be given greater apparent importance by a contraction of the vista which cuts out nearly all other objects except the hill, converges the attention more directly on the hill, and thereby gives it greater relative dominance.†

* Cf. footnote, p. 103. † See Drawing XVI, on next page.

Pictorial Enframement, Foregrounds, Backgrounds, and Planes of Distance

If a landscape composition is to tell as one unified thing it must be segregated from the things on each side of it. As we have seen, this may be done by its standing alone or being so important that the other things are not noticed; but in the actual practice of the landscape architect this segregation is almost always accomplished by the creation of some kind of frame, which not only prevents the visual intrusion of



DRAWING XVI

undesirable objects, but sets definite limits to the composition which is being considered, fixes its center, and so gives value to the compositional space-relations of the objects within it. Enframement on the sides of a landscape composition is the most important,* and many scenes are satisfactory when only so much enframed. (See Plate 14.) Overhanging trees may enframe a composition on the top as well (see Drawing II, opp. p. 30), and the shadows of such trees, or a long shadow from an object at the side, or perhaps a low mass of shrubbery over

* Cf. p. 96–97, Balance.

which the observer looks, will similarly enframe the view at the bottom. (See Plates 21 and 28.) Such complete enframement will still further concentrate the attention on the main portion of the composition. Generally these enframing objects, which from their nature should not attract attention to themselves, will be dark in color or lie in shadow, while the portion of the composition to be treated like an enframed picture will lie in light. (See Drawing XV, opp. p. 122, and Tailpiece on p. 61.) Again, the important part of the composition may be further inclosed and in another sense enframed by being relieved against some subordinated background, and by being shown in proper scale and relative distance by being seen over an appropriate foreground. (See again Plate 28, and also Plate 4.) Although the effect of a landscape composition can never be independent of its appearance considered as a picture in two dimensions only, it can never be entirely successful unless it is seen to be organized also in its third dimension, — its extent away from the observer. In order that the value of its three-dimensional forms may be properly perceived, it is desirable to make the relative distances of the objects away from the observer as evident as possible. We have already seen how the relative sizes of objects in perspective, their relative colors in aërial perspective, help in this perception. Simplification of the view into only a few planes of distance, and differentiation of these planes in color, in form, in light and shade, will also make the actual form of the whole composition more easily grasped and so apparently more unified. (See Plate 23.) It is evident that if the main feature in the composition needs to be made as important as possible, care must be taken that neither foreground nor background are interesting enough of themselves to obtrude upon the attention. If there is danger that the important part of the composition will appear somewhat too small to produce the desired effect, its apparent size in the composition may be increased by bringing the spectator nearer to it. If there is danger of the main object appearing to be too near to the spectator, within narrow limits the difficulty may be diminished by increasing the scale and coarseness of texture of the foreground, and by bringing the foreground as near as may be to the spectator, so that the apparent distance between it and the main object may be as great as possible. In a landscape composition the observer can concentrate his attention upon

any chosen object almost to the exclusion of objects nearer and farther away. It is impossible for the eye to see clearly at the same instant objects which are at widely different distances. If, therefore, the attention is called to an object, the eye focuses upon it, and objects at other distances are consequently thrown out of focus and make less appeal to attention. This fact makes it possible in landscape composition to use as a dominant object something subtending a very small proportion of the visual angle. For instance, a very distant mountain of marked form but not notable size may serve in a landscape view as a perfectly satisfactory climax, but in no ordinary photograph of that view will it appear other than insignificant.

It is to be noticed that while the painter has a definite and distinct frame surrounding his picture, in a landscape composition it is more or less a matter of arbitrary definition whether a certain object shall be considered as a portion of the frame or as a subordinate mass in the composition (see Drawing II, opp. p. 30); and furthermore, as we have seen, an object which helps to enframe one composition may play a dominant part in another.

Objects in Landscape Composition According to their Design Value

Whether a landscape composition be formal or not formal, the designer will be concerned with arranging it so that the attention may be held at one point or led from point to point in an ordered manner. He will introduce and arrange objects in his composition on account of the specific functions which they can serve in this way. Some objects, for instance, serve best to segregate one open area from another, like simple informal planting masses or formal walls and fences (see Plate 33 and Drawing XIV, opp. p. 112); some objects serve to decorate the surface of the ground, like fields of grain or fallen leaves or formal carpet-bedding and paths and pools (see Plates 29 and 30); some objects serve to call attention directly to themselves and thus play a dominant part in the whole design, or, according to their scale, in some subordinate part of it. (See again Plates 29 and 30, and also Drawing XX, opp. p. 158.) Such an object might be a mountain, a great oak tree, a flowering shrub, or a house, a pavilion, a hooded seat, or a sundial. While the essential esthetic functions of well-composed objects are definite in any scene, whether it be formal or informal, still they are more easily understood and explained when they manifest themselves in formal

design; and as in a formal garden all the more important functions of objects in composition in some way appear, we shall continue the discussion of these relations using the garden as an example in the section on the garden in Chapter XI.*

Temporary Elements

We have been considering the various objects in landscape composition which we have discussed, as being for the purposes of our design permanent in location and changing in form no faster than does, for instance, a growing plant. It is often desirable, however, to count as a part of our compositions men and animals moving about and having no definite location in the design. (See Plate 10, and Drawing XI, opp. p. 82.) It is evident that an object whose location is unpredictable can hardly be relied upon as a dominant object in a composition. Usually the designer expects rather to get a certain vivacity and variety from this element, a certain diversification of surfaces which otherwise might be too bare and simple, whether he is dealing with the ducks in a pond, the sheep in a pasture, or the crowds of courtiers on the great terrace at Versailles. Every landscape shares to some extent in the changing beauty of the sky and the moving clouds. (See Frontispiece and Plates 11 and 22.) In an inclosed garden this may be but an incident; in an open and distant view into the west, it may be the frequent presence of clouds more than anything else that makes the view a desirable one. Although man cannot predict the exact beauty which the skies may at any time offer to him, he may nevertheless so arrange his design that he may take advantage of whatever beauties may come, and that his own work may appear to advantage whether in sunshine against a darkened distance or silhouetted in cloud shadow against a brilliant background.

* Pages 233–246.

CHAPTER VIII

NATURAL FORMS OF GROUND, ROCK, AND WATER AS ELEMENTS IN DESIGN

THE VALUE IN DESIGN OF A KNOWLEDGE OF NATURAL FORMS — HILLS AND MOUNTAINS: typical forms — Hill and mountain forms in landscape composition — Modification of effect of hill by treatment of local details — VALLEYS: typical forms — Choice of viewpoint for completeness of effect of valley — PLAINS: typical forms and effects — BODIES OF WATER: their effects — Lakes — Islands — Shores and beaches — Streams and stream banks — Waterfalls — ROCKS IN NATURALISTIC DESIGN — Bowlders — Ledges — Color and texture of rocks — Rock planting — MINOR MODELING OF GROUND SURFACE — Banks.

The Value in Design of a Knowledge of Natural Forms

The natural forms of ground, rock, and water have individuality and value as elements in landscape composition in the degree that they have striking shape or color or texture, recognizable natural character, or appreciable emotional effect. The smaller natural forms, — such things as brook valleys, undulations of ground surface, small ponds, — the landscape designer may sometimes control. He may preserve them, and incorporate them into his own work, or he may imitate them in totally new construction. The larger natural forms — mountains and prairies and great river valleys, the ocean, large lakes, and the greater features of their shores — are landscape elements quite beyond the power of the designer to change in any essential way. He may, however, choose and develop certain points of view from which the natural landscape forms fall into good pictorial compositions, and he may arrange the foreground over which he has control in such a way as to enframe a good composition and to conceal incongruous elements. Also — and this should be the first duty and the greatest pleasure of a student of naturalistic design — he may study the great natural forms, become familiar with their character, get inspiration

from their effect, and in the light of his appreciation convey some part of his inspiration to the beholder of his own small work.

In whatever one of these ways he deals with natural landscape, knowledge of the natural forms is a prerequisite to good design. This knowledge can be obtained only by patient study of the forms themselves. This chapter can do no more than consider a few examples from a great number of forms, and discuss a few of the simpler considerations out of vast possibilities of appreciation and inspiration.

In ground forms large and small, the landscape architect finds the three simple fundamental form unities, the convex, the concave, and the plane. He studies hills and mountains, or valleys, or plains, and again he makes in his own work similar forms and relations of forms, of a size possible of production within his limited powers.

Hills and Mountains: Typical Forms

From the multitude of shapes of hills and mountains, the designer might differentiate for purposes of discussion three classes according to the way in which the attention falls on their modeling and on their outline. There are hills which are crouching and comfortable, round-topped, gentle-sloped, merging by imperceptible degrees into the surrounding ground surface. (See Plate 22.) The attention which follows their surfaces or their silhouettes against the distant sky may run as readily away from their top as towards it, and is definitely arrested nowhere along the line. Such hills are individual because they lift themselves as considerable masses above the neighboring landscape, but their surface is sequential with the surrounding forms. As their height becomes less and their slopes less steep, they lose their individuality, and become at length merely undulations of a general surface. Such hills may be the results of many different geologic causes, but they are often produced by long-continued erosion or deposition of soft materials. They may perhaps be left standing, first current-cut and then rain-worn, above the flat-bottomed valleys of the lower reaches of a river, being the remnants of a former plain, all the rest of which has been carried away by the stream; or they may be moraines or drumlins, masses of débris carried and at last deposited by the ice or by the under-ice water of a glacier.

There are mountains which are aspiring and individual, having a definite summit in which the lines of the slopes culminate and on which

the attention perforce rests. The lower portions of the slopes of such mountains need not be steep, and may indeed run smoothly into the surrounding ground forms; in fact the peak or crest of the mountain need form only a very small portion of its total bulk, but it attracts the attention and gives character and individuality to the whole eminence by concentrating in one dominating spire the upward sweep of the whole mountain mass. Such mountains, or at least their summits, must be made of hard material, and usually are the result of upheaval and of the disintegrating effects of frost and the erosion of water, their endlessly different shapes being the results of the cleavage or stability of the different rocks under the action of the destructive forces. This is, in most men's minds, the typical mountain form. Whether the beholder regards it as inspiring and sublime, or repellent and wild, will depend in part on the form of the mountain, no doubt upon its crags and its cap of snow, but more the effect will depend on the observer himself. A mountain range which seems inhospitable to the farmer, and savage to the city dweller, may be a glorious challenge to the mountaineer. (See Frontispiece.)

There are hills which rise abruptly from the surrounding landscape and bear on their tops a more or less level area, segregated by the steepness of the slopes from the lands below it. Such a butte or mesa attracts the attention as a separated mass in the general composition; there is no sequence of line either over or into the outline of the hill from the surrounding landscape. The upper plateau is segregated both actually and esthetically by the barrier sides. As an object in composition, such a hill is likely to be very individual, and to relate to other objects only by its total mass or color. Such hills may be the result of the water erosion of a previous plain made of a material which has a very high angle of repose, usually of a horizontally stratified material with a hard crowning layer, or they may be, exceptionally, the results of uplifting or subsidence along a fault plane.

Hill and Mountain Forms in Landscape Composition

A single mountain may be looked at for its own beauty, just as a statue may be, but a distant view of a mountain inevitably includes other elements besides the mountain itself, and if the mountain is to be most effective in the larger view in which it forms only a part, it must be compositionally related to the other objects in the view: it

must be led up to by converging lines, or supported by subordinate masses, or given scale by a proper foreground, or enframed by nearer hills or still nearer trees. Here the landscape architect, even with the small means at his disposal, may produce considerable results by so choosing the viewpoint and so disposing the foreground that the form, the character, the effect of the mountain tell to greatest advantage in the view offered to the observer.

The working of natural forces in any particular locality will tend to impose similar forms on similar materials. The compositional appearance of hills or mountains and their intervening valleys may be unified by the repeated parallelism of lines of strata, by the repeated steplike outlines which these strata cause in erosion. The constant angle of repose of a certain eroded material may cause a frequent repetition of a certain line of slope, a parallelism of hillside with hillside throughout the composition, or a balance of hillside against hillside on opposite sides of the eroding stream. The work of a glacier which has ground down one side of each hill in a series and left the opposite side steep and craggy may produce a repetition of unbalanced forms, a sequence, a tendency in one direction, which may be a very strong governing condition in the composition. The completeness of the pictorial composition of a number of hills and mountains as included in any one view is largely a matter of accident; but in some cases the unity of form caused by natural forces in these mentioned and other ways is so great that exceptionally it may be possible to choose a point of view commanding a landscape unified not only in its consistent character and in its effect, but also in its composition in form and color and texture, in repetition, sequence, and balance, as completely as though it had been constructed by some intelligence which had intended primarily this result.* (See again the Frontispiece.)

Modification of Effect of Hill by Treatment of Local Details

Man can seldom modify the shape of a hill, seen as a whole in the landscape composition, but he may sometimes modify its effect on closer approach by a consistent treatment of some of its parts. Par-

* Cf. Hugo Marcus, *Die Ornamentale Schönheit der Landschaft und der Natur.* Note especially his remarks on composition illustrated in nature by mountain ranges at the beginning of the chapter, Natürliche Versammlungsschönheit in der Landschaft . . . , and the figures at the back of the book. (See REFERENCES.)

ticularly with the smaller hills which are easily accessible to man, much may be done by a skillful designer to unify and intensify their desired effect upon the visitor by such means as the treatment of their summits, and by proper laying out of paths upon their sides. Let us suppose, for instance, that there is a subordinate hill near a New England mountain hotel, and that it is desirable to make the hill itself as important as possible, assuming as far as may be the effect of a mountain to the mind of the visitor. It would probably be best so to arrange the path to the summit that it concentrates most of the climbing in a steep ascent, preferably near the top, or perhaps, without making the path itself very steep, to run it along the steepest slope available. The viewpoint near the top might well be a craggy place, with a steep declivity below the spectator, and if the trees are all spruce, and stunted by poor soil, so much the better for the effect of height and wildness. If there be a shelter at the viewpoint it might be built of heavy rough stone or logs, and crouched against a bowlder as though to be sheltered from a great wind. If, on the other hand, it were desirable to make the hill seem as restful as possible, the path might avoid steep places, but seek incidents of openings and subordinate views, with frequent seats and all possible excuses for pausing by the way, and the summit might be gently rounding, perhaps with a sunny opening protected by surrounding round-headed trees and with a light shelter suggesting the comfort of the hotel.

Valleys: Typical Forms

Unlike a mountain, a valley very generally forms of itself a complete composition, when seen, as it usually is seen, from within. The observer's view is bounded by the sides which enframe the bottom, where usually the greatest interest lies both on account of the converging slopes of the sides and on account of the frequent presence of a stream. Some valleys are placid, restful, with gently-sloping sides meeting at the bottom in an easy curve, so that the interest follows this sequential surface as readily up and out to where the edge of the valley shows against the sky as downward to the lowest point. (See again Plate 22.) Such valleys are commonly created by the slow erosion of soft material, which, washing down from the upper parts of the slopes, leaves these merging by gradual convexities into the surrounding uplands, and, being deposited at the bottom of the slopes, con-

nects them by a smooth concavity with the floor of the valley or with the opposite side.

Some valleys are formed by steep slopes, perhaps leaving the upland at a sharp angle, though they may be continuations of a mountain slope above, and meeting below at a sharp angle, where lies the stream which is still obviously at work in deepening its channel and causing more material from the side slopes to fall into its bed. In such valleys the attention of the observer is brought sharply to the convergence of the slopes at the bottom. (See Plate 23.) These valleys are almost certainly more striking in their effect than are the gently-sloped valleys, and in those cases where the eroded material is hard they may become steep-sided gorges of almost any degree of seclusion and romantic wildness and gloom.

Other valleys have nearly vertical sides terminating sharply against a flat floor below, which thus is made to form almost a world in itself. Such a valley gives to the full a sense of seclusion, but may have, unlike the narrow gorge, an effect of sufficient openness and light and peace. Such valleys are also commonly the result of stream-erosion in a material such that their sides may stand very steep, and usually the flat floor of the bottom is made by deposition of material by the valley stream.

Choice of Viewpoint for Completeness of Effect of Valley

In arranging paths in a valley, to display its character to the best advantage, the depth of the valley should be made to tell at its full value. A U-shaped valley, or one with a flat floor and very steep sides, may be well seen from the bottom if this is not choked with trees, for the view includes at once the whole depth from the floor to the upper rim. A V-shaped valley, however, particularly when the immediate banks of the stream are steeper than the average side slope of the valley, as is frequently the case, is often not seen to good advantage from the bottom, as the intermediate parts of the slope prevent a full view of the inclosing sides. In such cases, and often in other valleys, the best view is obtained by looking along the valley from some projecting buttress, considerably above the bottom, commanding the whole sweep of the sides and getting an additional effect of depth by a descent, perhaps steep, from the viewpoint to the bottom of the valley. If considerable exertion is necessary in climbing up or down to the

viewpoint, so much the more will be the effect of the depth of the valley.

Plains: Typical Forms and Effects

Plains are usually the result geologically of the deposition of fine material by water. Sometimes the material has been deposited by the slackening current of a stream, but often it has been laid down on the bottom of a former sea or lake. The minor variations of the surface are partly the natural results of variations in the depositing currents of water and in the character of the material deposited, but usually they are rather the result of subsequent erosion. Plains are almost never perfectly level, but without losing their essential flatness, it is quite possible for them to have noticeable minor undulations which, under various effects of light and shade, may break the main surface pictorially into sharply segregated units of endless variety.

If a plain be small enough so that its boundary of hills or foliage is visible as a surrounding wall, the form of the plain will depend largely on the outlines given it by this boundary. If our attention rests upon this form, we may think of the composition before us as an enframed area of a certain shape; but our attention may pass entirely over the plain, and we may think of the composition as a wall of foliage or hills seen across a level foreground. The dominance of the plain or of its enframement in a given composition will naturally depend on the relative amount of attention attracted by the form and character of the enframement and by the character of the plain in its texture of grass and flowers, its subordinate play of surface, and its recognizable form inside of its boundaries. Some plains are so large that their actual limits may be beyond the distant horizon. The first effect of such a plain upon the observer is that of vastness like the effect of the open sea, — of infinity like that of the star-lit sky, — an effect which is produced in its completeness by no other forms in nature.*

Bodies of Water, and their Effects

Just as with plains, as we have said, so with the sea and with great lakes, the effect on the observer is less that of form than of infinity. Bodies of water with visible boundaries, however, like plains so bounded, will depend, for the attention which they attract to their surface, upon the total form of this surface given by their boundaries and upon the variety and interest of the surface itself.

* Cf. Chapter V, p. 64.

More than any other element in a landscape composition, a lake or pond surface is a unified thing. It is all of the same material, sharply contrasted with its surroundings, it lies all at the same level, and it has from its motion, the sound of its waves, its constant play and change under the influence of wind and current, a life and character which is almost a personality. In its responsiveness to the forces of wind and storm, in the suddenness with which it may pass from calm to gayety, from gayety to gloom or fury, its range in emotional effect is so great as to make it, in this respect, a thing apart from the other elements of landscape except perhaps the sky.

When a water surface is calm, it is diversified by the reflections of its opposite shore, of the dark hollows under an overhanging tree or at the foot of a great rock, of the lacework of a winter tree against the sunset sky, all somewhat refined, etherealized, and harmonized by partaking of the tone of the water mirror. (See Plates 26 and 32, and compare Drawing XXV, opp. p. 196, and Plate 1.) When the surface is ruffled by the breeze the reflections lose the beauty of exquisite detail to take on the beauty of impressionistic color, into which the brilliant reflection of the sky, repeated by the ripples in lines and patches, is interwoven at the will of the wind with the darkness of the reflection of the shore. This power of reflection gives any water surface a strong appeal to the interest of the observer, and the smaller natural water surfaces, — ponds, lakes, and rivers, — lying as they must where the natural slopes of the land serve to direct the attention to them and to center it upon them, are almost inevitably in each case the heart of any composition in which they are included. (See Plate 28.)

Lakes

Lakes and ponds are almost always formed by the collection of water in a valley hollowed out by some previously operating geologic force. The form of a lake is therefore commonly the form of the previously existing valley; and, for example, it will be irregular and broken, with narrow arms and sharply jutting headlands, or it will be rounded, with smoothly flowing curves of bay and promontory, according as the original valley was carved by rapidly flowing water out of hard rock, or formed, perhaps partly by erosion, partly by deposition, out of the débris of a glacier or the sand and gravel of the lower reaches of a slowly flowing river. The promontories in the lake will probably

be formed by spurs of the surrounding hills connected with the back-lying high land, and often running into the lake with an island or chain of islands lying off their points where the original ground surface dips in parts below the water. The bays, similarly, will be likely to be continued inland as valleys reaching into the surrounding hills. When a lake is fed by a considerable river, the portion of the lake where the river enters is likely to be filled with silt, and therefore to be shallow, sandy, and with a shore of smoothly curving outline.

Islands

If islands are water-surrounded hilltops in a lake, they may lie in a series off a point, as we have said, or in some other way their location and form may continue or repeat the modeling of the surrounding land surface of which they once formed a part. If the islands are sand deposits they will lie where rivers come into the lake or down stream and to leeward of points. If the islands are in a river, they will be either projecting rocks or other hard materials which have remained when soft material was eroded around them, or they may be sand bars, or perhaps remains of "ox-bow cut-offs" where the river has shifted its course without entirely abandoning its old channel.

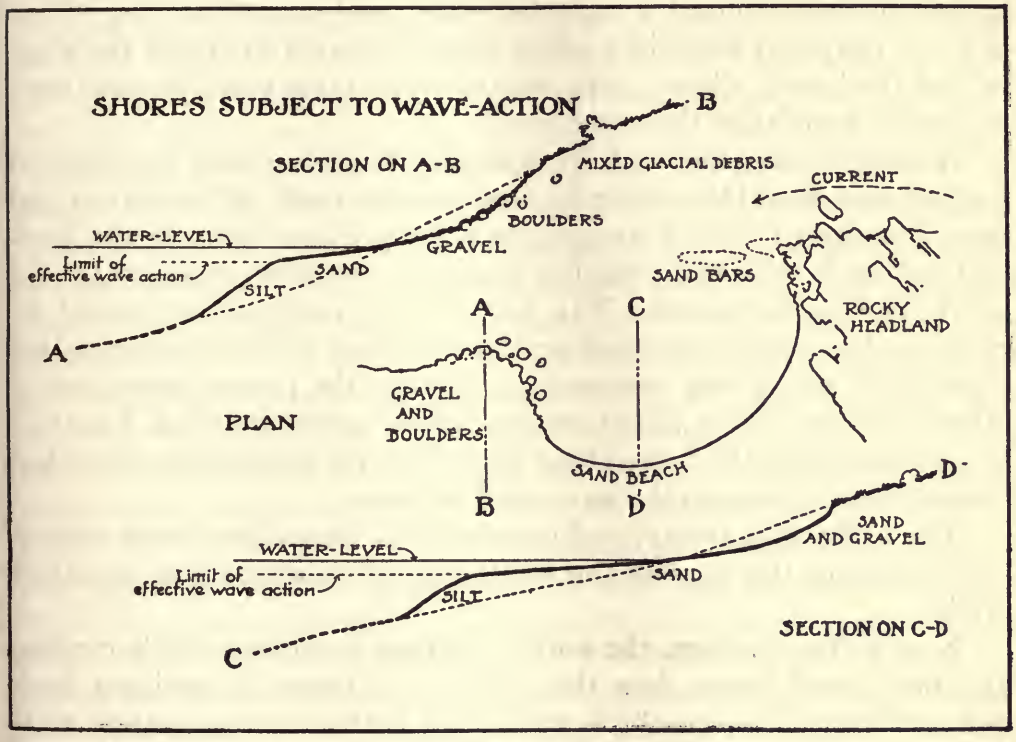
Natural islands, then, are likely to have some ordered relation to each other and to the shore, different according to their geologic origins, making them often fall into very effective pictorial compositions. These can well serve as suggestions to the landscape designer not only in his shaping of water areas, but in his treatment of lawns and planting as well.

Shores and Beaches

Though the main shape of a lake is usually the shape of its pre-existing valley, the shape of the actual shore of a lake, at least of a large lake and more especially of the sea, is the result of the action of the wind-driven waves.

Where a shore or bank is being cut away by wave action, if the bank is composed of material of various sizes, — as it probably will be if it is river deposit or glacier deposit, — the coarser material longer resists the assault of the waves and protrudes from the finer material. If considerable masses of coarser material exist, they will tend to form promontories, between which the finer material will be cut back into bays. Moreover, each material will have its natural angle of repose in the bank where it is subject only to the under-cutting of the waves

and the erosion of rain, the coarser material maintaining itself at a steeper angle, the finer material lying at a flatter slope. And again, on the beach under the wash of the waves, the angle of repose of each material will be characteristic, both fine and coarse lying less steep than in the bank, but the angle of the finer material being still the less. On the beach the finest stuff will be dragged farthest out by the waves,



DRAWING XVII

so that the ground at the foot of the cut bank or cliff will often consist of rocks and coarse gravel, while nearer the water line will be finer gravel and sand. Under the surface of the water, the beach will extend outward, composed of finer and finer materials, until it is sufficiently below the surface not to be disturbed by ordinary wave action. Then it slopes more steeply down to the original bottom of the body of water. (See Drawing XVII, above.)

Whenever an along-shore current is bearing sand or other fine material with it, if there is a slackening of current, there is a deposition of the drift material which it carries, and so any sheltered cove, or the sheltered side of any promontory, would tend to have its own sand beach, and on the downstream or down-current end of promontories there would tend to be a sand spit. If the conditions remain constant, there will come a time when a beach will protect itself against wave action, having assumed a constant slope, and except for the effects of great storms or high tides which send the waves to attack the slope behind the beach, a beach may remain in the same place for ages even under the assaults of the ocean surf.

A typical shore modeled by wave-action from mixed materials of various sizes would thus have its promontories made of the coarser and more tenacious material standing at a steeper slope both in the bank and on the beach, and probably with some outlying bowlders on the beach and in the water. The form of the promontories would be more or less rugged, expressing the structure of the wave-resisting material of which they are made. Between the promontories and in other sheltered places might be beaches of gravel or sand, flatter in slope and falling into curved lines expressing the submission of the fine material to the forces of the waves and currents.

Streams and Stream Banks

The valley of a stream and especially its immediate shores express by their forms the work of the flowing water to which they owe their origin.

Near its head-waters, the work of a brook is almost entirely cutting, and the ground forms show this. Where a current is cutting a bank of mixed material, naturally it cuts at the bottom, carrying away what it cuts, and the form of the bank will be produced by gravitation and the work of rain, which carry the material down into the stream. The more tenacious the ground is which the brook is eroding, or the larger its component particles, the steeper will be the banks which the brook produces. Any particularly large fragment of stone will resist the current and perhaps serve as a protection to weaker material behind it. On the other hand, a bowlder standing in the stream will tend to concentrate the erosive power of the water where the current strikes it, so that above it and on each side of it the bottom of the stream may be scoured

out, whereas immediately downstream from it there may be a shallow. If, however, the bowlder or ledge serves as a dam and the water falls over it, then on its downstream side will be a pool cut by the fall. (See Plate 24.)

Farther down the stream some of the material will be deposited which was cut above, and the shape of the river bank will be modified by the formation of bars. In general the larger material is deposited first, as the current slackens, so that gravel bars may lie in a considerable current, but sand bars only in comparatively slack water. In its lower reaches, a stream is constantly depositing material at one place, but eroding at another place the material which it has previously deposited. The stream tends to swing from side to side of its bed, rebounding as it were from shore to shore as it progresses. The points of its greatest friction with its banks are the points where its current is thus deflected. The current tends therefore to lie on the outer side of each curve of the stream. The steep newly cut banks and the deep water will be on this outer and convex side and the flat newly formed bars reaching gradually into the stream will form points on the concave side, or extend slightly downstream from such points. (See Plate 25.) In very small streams, these effects are likely to be offset by variations in material or even by growth of trees and shrubs on the banks, but where a designer is endeavoring to give character to a small artificial stream, some exaggeration of these essential characteristics, which by association will lead the observer to think of larger streams, will give his work individuality and verisimilitude. Even when in reality the current is sluggish and could not cut for itself any considerable bed, it may be effective to model the bed as though it were the work of a powerful current which might be imagined to run in the Spring, of which the present trickle from pool to pool might seem only the diminished Summer flow. In designing artificial brooks or rivers it should be remembered that the essence of a stream is continuity. Any water-body simulating a natural stream should have an obvious place whence it apparently comes and a place into which it apparently goes; and with streams as well as with lakes, this effect of continuity may be produced by the extension of the water beyond the portion seen, and the consequent suggestion of greater extent than actually exists.

The fact that every stream is constantly changing in volume and in position as it carves its banks, so that it exerts different forces at different times, makes it extremely hard, with a natural brook, to say just what forces produced the arrangement of materials which we find in a given place; and therefore about the only safe guide in imitating such arrangements of material is, as in all interpretations of nature, a close familiarity with actual examples, which will give a man an almost instinctive feeling for reasonable arrangements, though he may not be able to say according to just what assumption as to interaction of natural forces he is proceeding.

Waterfalls

Where a stream comes down a sharp decline or vertical drop in its bed in the form of a cascade or waterfall, it becomes at once an important object in the landscape. The vertical display of the sheet of water makes it very conspicuous. The obvious manifestation of force and the noise and sparkle of the water make great appeal to the attention, and the natural enframement of the fall due to its own cutting back into its bed makes it almost certainly the center of the composition in which it is found. (See in order Plates 14, 13, 12, and 27.) It is surprising how small a stream of water will make an effective fall. Some of the well-known and really striking cascades of the Alps and of the White Mountains are formed during most of the year from a stream of water of less than a square foot in cross-section, and a considerable artificial cascade in a small-scale rock garden may be made from the flow from a one-inch pipe. If the volume of water is at all large, it will have a singular effect of unity and completeness if the fall be a single clean leap of the whole body of the stream from the upper ledge to the pool at its foot; but a small stream may often make a more effective fall if it descends in a thin sheet from rock to rock with a great splashing and glistening of foam and spray. Where the supply of water is very small, the effect of the fall will depend very much on the shape of the rocks or ledges over which the water flows. If these are rounded so that the water clings to them, the fall will be not at all conspicuous; if, however, they form a series of overhanging lips so that the water falls free in each case, the cascade will be apparently of much greater magnitude.

Just as you can, elsewhere along a stream, add to its apparent im-

portance by making its bed seem to express the work of a greater flow of water than now occupies this bed, so you can magnify the importance of a waterfall by making its setting and the pool at its base apparently the work of a greater carving power than there really is. Indeed this relation of stream to stream bed is what most of us city dwellers are accustomed to see who visit the wilder country in Summer or Autumn, since the mountain stream flows bank-full and does its work almost entirely in the Spring, and during the rest of the year the shrunken flow of water occupies but a small portion of the bed carved by the Spring flood.

Rocks in Naturalistic Design

The landscape architect is not infrequently called upon to design a unit in a naturalistic landscape, or to treat a part of a natural landscape, in which rocks form the principal objects to be arranged.

The use of rocks as a material in landscape design is subject, like the use of all other materials, to the laws of design with which we are familiar. If rockwork is to be esthetically good, it must be apparently organized. If it is to look man-made it should be organized into some recognizable man-made shape, — it should form a wall, a terrace, a paving, a structure; if, on the other hand, it is to simulate the work of nature, then it must be organized as groups of rocks in nature are, — the rocks must be related one to another as though they formed part of a sea beach, of a talus slope, of a water-eroded slope, of an outcropping ledge, or of whatever natural rock-made form the designer chooses, or the circumstances require. This choice between style and character is, as always, the first choice the designer must make. For instance, if the rocks are used only as a place for the growth of rock plants on a small scale, and no rocks are naturally visible in the landscape, the designer should carefully consider whether it would not be better to make a frankly constructed wall or pavement, in the cracks of which his plants might grow, rather than to attempt an imitation of nature so small as perhaps to appear incongruous with the surrounding landscape.* If, however, the area in which rock is being used as an element

* Cf. " . . . where the ground cannot be made to look natural, it is better, at all times, to avow the interference of art than to attempt an ineffectual concealment of it."

Repton, *Sketches and Hints on Landscape Gardening*, 1794, p. 27–28 (end of Chapter III).

can be completely screened from the rest of the landscape, and is extensive enough so that when it is so screened it will not appear absurdly small in relation to the necessary paths or steps or human figures which will be found in it, then it may be possible to arrange the rocks on the assumption, as it were, that they have been put there by some definite working of natural forces, and so to produce a naturalistic composition good in itself and not betrayed by its surroundings. If the rocks are used in connection with existing natural rock, then the character of that natural rock of course must be carefully studied and followed in the new work.

In his use of rocks in design, the landscape architect must not lose sight of a few elementary geologic facts. The original substance of the earth's crust was rock, and much of its modeling still is plainly based on rock form, but in the course of ages of breaking down and transportation of fragments, mostly by water, the rock has commonly come to be overlain by earth which has assumed its own forms under the forces which created and transported it. On the surface of the earth to-day, we find rock, as a striking element in landscape, still existing in primitive ledges, or broken away by frost and still lying in large masses showing by their stratification and cleavage the structure of their original ledge, or carried away from their first site by ice or water and worn by the friction of its transportation into more or less rounded forms, or broken and worn into still smaller fragments, the pieces losing their individuality as they become parts of a deposit of small bowlders or gravel or sand. There is bound to be, therefore, a natural relation between the kind and character of the rock and the larger forms in which it is found. It is idle to attempt to imitate a naturalistic ledge-outcrop with a collection of water-worn or ice-worn bowlders, for both their rounded form and their varied material would preclude any natural effect. Equally impossible is it to imitate a stream-cut earth-and-bowlder bank by placing angular stones at random on the surface of a gravel slope.

Bowlders

Bowlders are usually found exposed, in nature, where the softer material with which they were once associated has been removed by some natural force of erosion. Bowlders are found, for instance, grouped in New England fields where the softer material of the glacial

débris has been worn down all around them and they stand above a more or less level surface. Such compositions are often very beautiful, but they are usually ineffective when imitated in a small inclosed space, and they commonly give scant opportunity for the growth of rock-loving plants.

Bowlders are more frequently found as parts of the banks of ponds or larger bodies of water: in places, that is, where the surrounding softer material has been cut away from one side by the waves, and the rocks, large and small, lie where the interaction of water wash and gravitation has left them. Such a bowlder bank and beach may be imitated on the shore of a pond, natural or naturalistic, and if in scale with the pond it may well add a considerable element of verisimilitude to an artificial water-body, but except as a shore such a bank would be unnatural.

Bowlders also may form important elements in a scene where they have been laid bare by the action of a flowing stream. The stream valley, as well as the pond-basin, is a good landscape character for the designer to imitate, since its shape makes it a composition enframed and apart from the rest of the landscape. (See Drawing XVIII, opp. p. 146.) When rocks are used as a part of the valley side, they will normally form the projecting, steeper, and dominant parts of the banks, and so assume importance in the composition.

Ledges

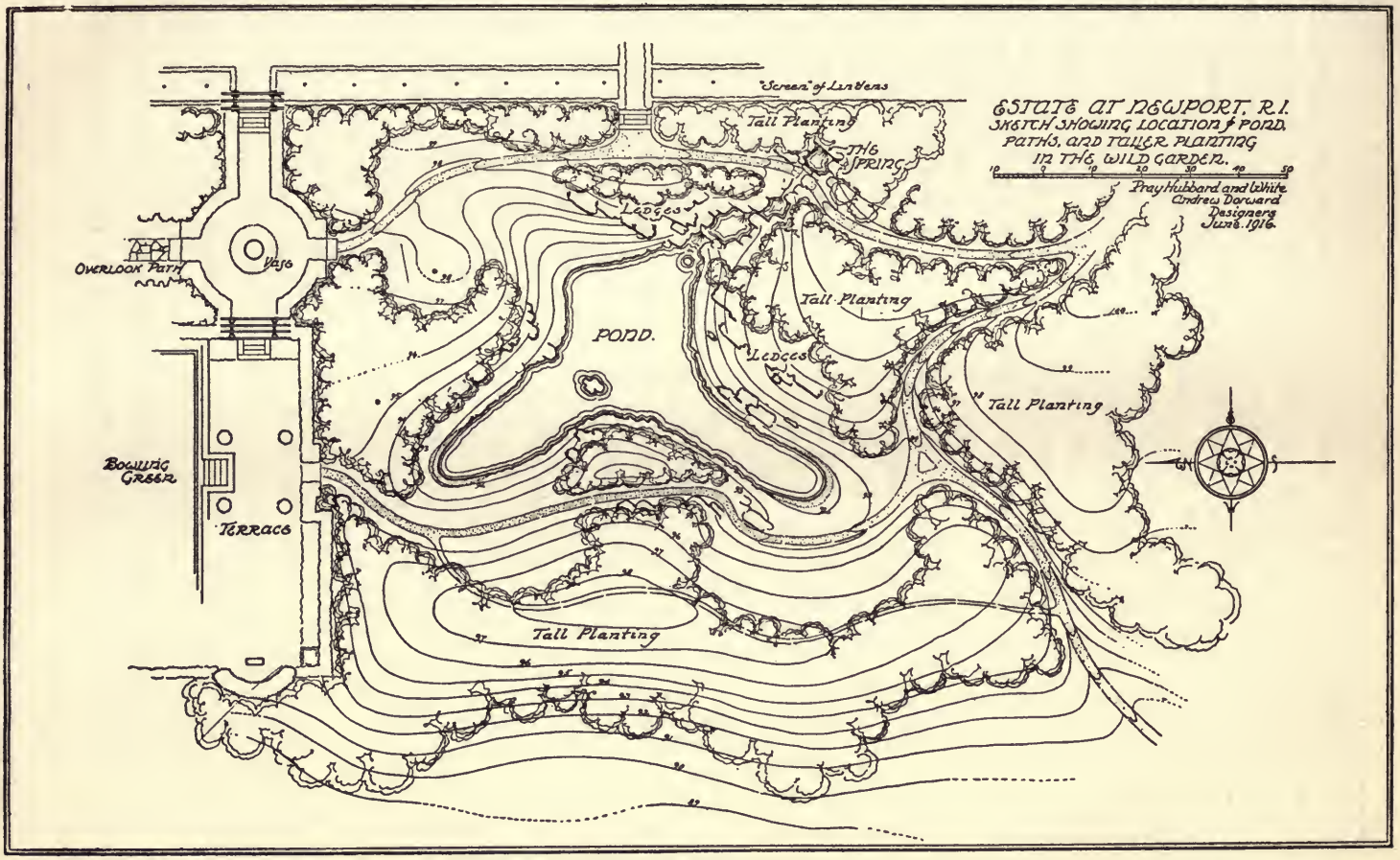
Rock appears also in the landscape as outcropping ledges of natural stone. Sometimes it has evidently been exposed by some of the forces which we have discussed; sometimes, lying at steep slopes or at high altitudes, in cliffs or mountain summits, it has apparently never been clothed by any softer covering, at least not in recent geologic times. Such rock ledges, subjected to the action of the weather and in a great part of the world to frost, will in time break up on their surface into separate rocks. If the slope is not too great, these rocks will still remain more or less in their original position, and by their related forms and the direction of their fissures and perhaps their stratification, show the character of their parent ledge. Groups of rocks so formed are likely to produce, in nature, particularly unified and interesting compositions. They offer also very suitable abiding places for rock-loving plants, since the fissures among them may be deep, and all the loam

which they contain can be kept damp, — obviously a difficult matter with the shallow soil which runs out upon a rounded bowlder. Naturalistic rockwork of this kind offers the further advantage that it can be laid up at a steep slope or even with an overhanging face, without necessarily sacrificing its natural appearance. And a proper choice of the rock material, when this is possible, so that it shall have a definite stratification and cleavage (see Plate 27), and an arrangement of the rocks, here simulating a solid ledge, here closely grouped, here scattered, but always suggesting the parallelism of the strata, will be a powerful aid both to the unity and to the naturalness of the design. The designer need not be driven into too great uniformity by thus expressing the stratification of the supposed ledge outcrops. In nature the smaller pieces dislodged by frost may be thrown into any position. At the foot of a steep face of rock, for instance, there may be a talus-slope, a jumbled pile of dislodged fragments. Some study in the arrangement of these more accidentally-placed smaller pieces will give sufficient variety without sacrificing naturalness.

It is possible, where the scale of the design is large enough, to combine ledge outcrop and stream-cut bowlder bank and perhaps gravel and sand deposit in one composition, but it should not be attempted unless great care can be given to the actual execution, to keep one character dominant in each scene, for unity of effect.

Color and Texture of Rocks

In all designs of rock, whether in ledge or in bowlder bank, the texture and the color of the rock are very important. The rock normally gives an effect of strength and solidity in the design, and for this it does not need bright color. It is rarely desirable therefore to have the color of the larger rocks and ledges very conspicuous. Moreover, to give an appearance of age and so of naturalness to the design, weathered or lichened rocks should be used if possible. A light colored rock is likely, in most localities, to look as if it were newly exposed to the weather. A rock dug from beneath the ground will retain for years an unnaturally bare appearance which makes it very hard to deal with in this sort of design. It should not be forgotten, however, that some mosses grow only in shade and dampness, and some lichens best in sun. If they are to persist, the rocks on which they grow must be used in situations similar to those from which they came.



DRAWING XVIII

Compare Plate 27. The rockwork, water-supply, and planting had all been put in place within six weeks of the date of the photograph. The site was originally an open field.

Rock Planting

However well the rockwork may be done, it will still depend on the planting for its success. It is essential not only to choose plants which naturally live — or at least can live — in rocky places, but to preserve a scale relation between rock and planting which will not dwarf the rock, and a texture-contrast so that each material may accent the effect of the other. (See again Plate 27 and also 35.) The intended planting must be borne in mind when the rocks are arranged, not only so that proper loam-spaces may be left for the plants, but so that when the planting is finally set out it shall not overpower or conceal rock-compositions which were apparently striking enough before the planting was introduced.

As any rockwork can at best be only suggested on plan, nothing but skillful, patient, practical superintendence will give results worthy of consideration, and no mean ability in visualizing the final result is required of the superintendent who can see his way efficiently and directly through the confusion and structural exigencies of the early stages of the work to a final consistent natural effect.

Minor Modeling of Ground Surface

In the informal modeling of the ground surface which the landscape architect is called on to do in his usual practice, particularly in his smaller work, he has seldom the untrammeled opportunity to approximate to some one landscape character, as in the various examples which we have just discussed. He is engaged rather in providing for all the economic necessities, — roads, drainage, balance of cut and fill, and so on. Nevertheless he suggests such natural character as he can, — at any rate he displays the natural forms of his trees, shrubs, flowers, and turf to best advantage; and with all this he makes a ground surface which shall be as interesting and as compositionally excellent as possible. Some general considerations relating to this kind of ground-modeling are worth discussion.

In any open area of considerable size which has only slight modulations of surface, the line of view of the observer is almost certain to be nearly parallel to the surface. A very slight elevation will therefore probably conceal what lies immediately behind it, and on account of this fact the landscape architect can greatly change the appearance of the surface without any great change in the relative elevations of its parts.

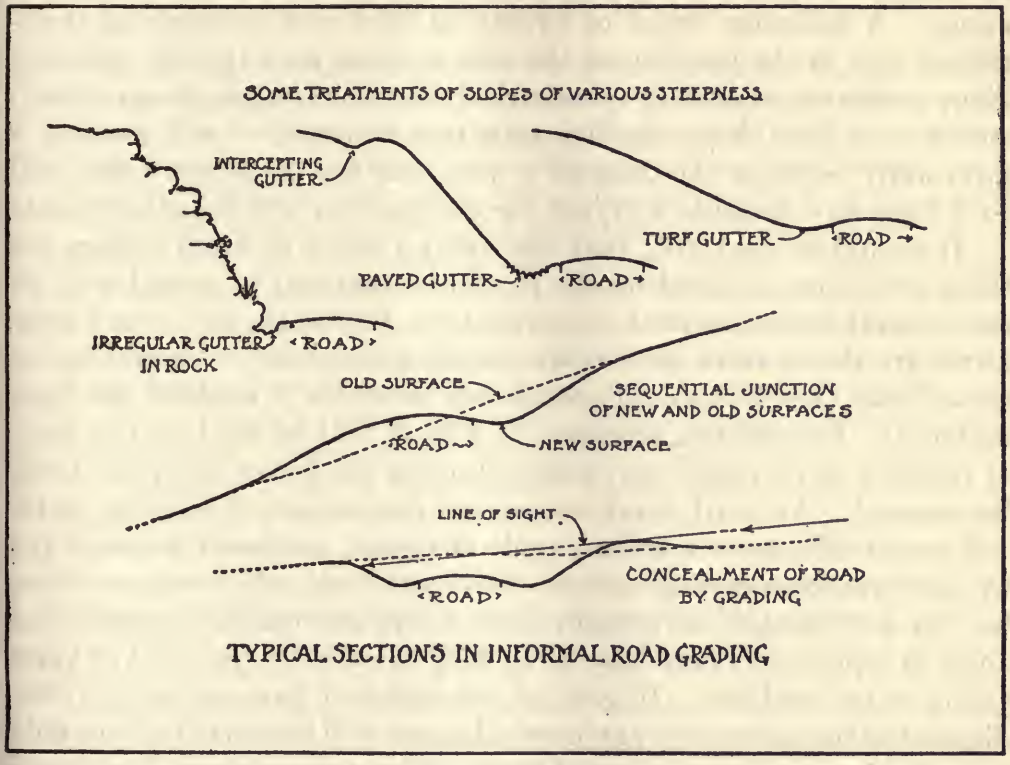
If his object is to unify the whole surface, so that its total extent and its main form are at once to be seen, the slight elevations and depressions which he may make for variety in the surface will be related sequentially to each other: they will be plainly all undulations and modulations of the same surface. The designer may even take pains in this case that no part of the surface is concealed from the eye: he may depend for interest and variety on the apparent differences in texture and color caused by the slight differences in the relation of the angle of slope to the view of the observer. If the landscape be seen in the low light and long shadows of morning or evening, such slight variations in surface will give great differences in appearance and may quite sufficiently distinguish part from part without interrupting the whole. If, however, the designer wishes to have a more striking and definite difference between certain parts of the surface, he may do so by making a nearer rise conceal a farther hollow. If the line of sight over the top of the rise misses the ground beyond by only a few inches, still it may be enough to bring out the silhouette of the nearer ground against a background considerably more remote. If then either portion of the composition is in light when the other is in shadow, the difference may be very marked, so marked perhaps as to change the composition from one of sequential modeling of surface to one of harmony of masses and contrast of light and shade.

Banks

There are many cases where the landscape architect is obliged to make rather steep slopes for a short distance, not primarily for the sake of the landscape appearance but to provide for a road or some such structure.* If the purpose of the designer is to make the whole composition as natural as possible, he may diminish the incongruity of such grading in two ways. He may so arrange it that from the important viewpoints the line of sight strikes first on a naturally modeled surface on the hither side of the depression and strikes again on a naturally modeled surface beyond it, the observer being left to infer that what he does not see between these two points is like the surfaces which he does see. It may be, however, that the re-graded surface cannot be concealed from the observer. This will plainly be the case, for in-

* Cf. article by J. C. Olmsted, *The Treatment of Slopes and Banks*, in *Garden and Forest*, Sept. 5, 1888, with cross-sections. (See REFERENCES.)

stance, when the observer travels along a road and looks at its side slopes. Here the designer will endeavor if possible to make the elevations or depressions which he must bring about in the surface of the ground seem as though they had come about naturally. In some cases this is possible, and the hollow through which a road runs, or the little



DRAWING XIX

level on which a shelter stands, may look as though it had been there for ages and had merely been taken advantage of by the designer. On the other hand, there are many cases where it is impossible to conceal from any intelligent observer that the forms of the ground at which he is looking were made by man, for man's purposes. But even here a great deal can be done to make these forms as little incongruous as need be with the natural forms which make the rest of the composition. (See Drawing XIX, above.) In constructing his new slopes the

designer can observe what typical forms his material would take under the natural forces at work in the surrounding landscape, and what forms it actually does take in the surfaces immediately adjacent to his work. He can then arrange his slopes so that at least they may be of a general form similar to those found in the locality, and of a sequential and smooth flow of surface, continuous with that of the forms into which they should merge. A judicious choice of variety in form and steepness of slope, special care in the junction of the new surfaces with the old, and studious avoidance of unduly symmetrical forms or straight lines or sharp angles — at least when dealing with soft materials — will produce a form unity between the designer's work and the landscape which will go a long way towards unifying the composition which includes both.

It should be said, too, that the natural forms of earth surface are those which are assumed by the particular material in accord with all the natural forces at work — gravitation, rain-wash, etc. — and these forms are therefore in most cases changing but slowly. Imitations of these forms therefore would presumably be stable if made of the same material. The greatest steepness of a bank will be fixed by the angle of stability of its component material under the forces to which it will be exposed. An earth bank subject to the erosion of running water will practically never reach an angle of repose, and must be protected by some erosion-resisting surface. An earth bank which may at times be very wet, though not actually eroded, will still tend to assume a low angle of repose, and may have to be held in place by the roots of vegetation or by bowlders. In general, the choice of form and slope at the disposal of the designer in any particular case will be restricted, not only by geologic congruity to natural form and by compositional form unity with the surrounding forms, but also by the physical characteristics of his materials.

CHAPTER IX

PLANTING DESIGN

PLANTS AS MATERIAL IN LANDSCAPE DESIGN — The time element in planting design — Relation of planting design and maintenance — PLANT CHARACTERISTICS IN LANDSCAPE DESIGN — PLANT FORMS — Classes of tree forms and their uses in design — Form the expression of mode of growth — Winter tree form — Form in topiary work — PLANT TEXTURE — PLANT COLOR — Effect of character of leaves on foliage color — Range of foliage color — Restricted use of other colors than green — Effects of foliage color — Contrast of color in differentiation of units in design — Foliage color and aërial perspective — Use of "colored" foliage — Autumn foliage — Winter color, bark, and fruit — Color of flower — Practical difficulties of design in flower color — Circumstances harmonizing flower colors — Mass relation in flower color — PLANT CHARACTER — Species and character — Individual plant character — Character and environment — Relation of plant character and landscape character — "Expression" and character — Association and symbolism — PLANTATIONS — INCLOSING PLANTATIONS — Outline, modeling, and treatment of informal inclosing plantations — Hedges — Low hedges and edgings — SPECIMEN TREES AND SHRUBS — TREE AND SHRUB GROUPS — Composition of groups — SHRUB BEDS — HERBACEOUS BEDS AND BORDERS — Flower beds as parts of a garden inclosed — Arrangement of plants in relation to form of bed and form of plants — Arrangement of plants in relation to time of bloom — Arrangement of plants in relation to color — Grouping of plants according to character — PLANTING AS SURFACE DECORATION — Carpet bedding and parterres — Ground cover — Turf — PLANTING IN RELATION TO TOPOGRAPHY — Waterside planting — PLANTING IN RELATION TO ARCHITECTURAL STRUCTURES — Planting as enframement — Planting as transition between ground and structure — Planting as decoration of structure.

Plants as Material in Landscape Design

The architect, the sculptor, or the painter can create, within the limits of his material, practically any shape, color, or texture that he may think of, and in his design there are no units other than those which he determines. The landscape architect, however, in designing in foliage, must for the most part choose those shapes, colors, and textures which already naturally exist. However completely his foliage masses and his flower beds are unified, they still are collections of recognizable

individuals; and in many landscape designs individual plants are necessarily the essential elements of the composition, and must be so treated. Plants are living things: they grow from year to year, come to the height of their development, and die; they change their appearance with the seasons; the form of each expresses its particular racial inheritance and the accidents of its individual life. Plants have inevitably certain conditions of existence, certain requirements of soil, climate, and so on, and certain associations in our minds with other plants, with various uses, and with the places where they naturally are found. The landscape designer is not free, therefore, either economically or esthetically, to disregard the individuality of the plant material with which he deals.

The Time Element in Planting Design

Through the growth of plants, the landscape designer has an opportunity which other designers have not: for although he may by sufficient expenditure produce in a short time approximately the effect which he desires, he may, on the other hand, with comparatively little expense set out small plants and trust to their growth to bring about in time the effect which he originally had in mind. Granted this element of time, the landscape architect has in vegetation a very plastic material with which he can produce masses of manifold shapes, and if necessary of great size. This advantage of the landscape designer brings with it a corresponding disadvantage: he cannot judge and change and perfect his design before it leaves his hand, as the sculptor does, — often indeed his work comes to its perfection long after he is dead. He must therefore, with little aid from drawings and often with little aid from the present condition of the ground, be able to imagine his completed design and to foresee and take account of the changes through which his planting must go from its present state to its full expression.

The landscape architect must consider the changes in the appearance of his plants during their whole growth as well as their cycle of seasonal changes, and he must either so arrange his design that it is consistently practical and beautiful at all times, or he must choose some particular time, some season of the year or some future year, when his design is to be at its best, and in designing have in mind the appearance of the plants at that time, neglecting to some extent their appearance before and after.

Relation of Planting Design and Maintenance

Closeness of texture, symmetry of shape, similarity of plant to plant, may be continued for a long while under good maintenance, or quickly lost without it. Plants of varying robustness and speed of growth may thrive together under good maintenance, but otherwise the stronger soon destroy the weaker. Plants may be set out close together for immediate effect, and good effect be later maintained if they be thinned at the appropriate time. If this future thinning cannot be relied on, either present or future effect must be sacrificed in the planting. Design will therefore often depend on the degree of maintenance that can be expected.

Plant Characteristics in Landscape Design

The characteristics of plants, over which, as we have seen, the landscape architect has little or no control, have inevitably a great influence on the effect of any design in which vegetation is used as a material. The forms, colors, and textures offered by plants give to the designer certain opportunities, but also they set for him certain limits. The natural character of each plant, and the associations which in most men's minds cling to certain plants, give a plant a complex individuality, and make it by no means an easy thing to use in esthetic composition. The understanding of these characteristics of plant material constitutes no inconsiderable part of the skill of the landscape architect. Indeed, it is special knowledge like this which differentiates the landscape architect from other designers.

Plant Forms

In the forms of trees and shrubs and herbaceous plants with which the landscape architect deals there is a very great variety. The forms are similar only in the fact that they are all the expressions of the growth of the individual plant, and that they are all more or less symmetrical on a central axis. From the physical necessities of their growth, plants are balanced forms, either a mass of foliage upon a central stalk, or a number of separate branches diverging more or less consistently from the vertical, and forming a typically symmetrical mass of leafage as each twig and leaf equally seeks the light. Almost any free-standing plant, not distorted by some unusual influence, will be, therefore, as far as shape goes, an individual and self-sufficient object in the composition. The same general considerations as to the use of these forms in composition apply equally to all kinds of plants, but with herbaceous plants,*

* See discussion of herbaceous border and flower beds later in this chapter.

and to a less degree with shrubs, their greater interest lies in their flower, and they are more often planted in masses where their individual shape is of little account. We shall discuss therefore the shapes of trees only, but whatever we discover about them can be applied, in a general way, as well to shrubs and herbaceous plants.

Classes of Tree Forms and their Uses in Design

In their main outline — in the case of deciduous trees particularly when this outline is filled in by foliage — the shapes of trees may be thought of in certain classes, which are perhaps more worth discussion than others for us because they are more common in this country or because they have more definite use in design.

There are those trees which are low, rounded, crouching, broad at the base, and which tend to form an undulation rather than an object in the distance; and those which, while round-headed, stand high, perhaps on a considerable trunk, and arrest the attention as separate objects through the break that their upstanding forms make with the skyline. Some of these rounded trees, like the horse-chestnut before it reaches old age, carry their branches close together, well covered with leaves, no branch protruding far beyond its fellows, so that the whole tree presents a fairly even surface with little interest of detail of foliage mass and little play of light and shade. Such trees may be used in formal rows or where a single heavy free-standing specimen is desired, or to give a greater density and solidity to a projecting point of a group of other trees. Most of the rounded trees have more variation in the subordinate forms caused by their branch arrangement. They may be less strikingly individual, but they blend better with other members of a tree group, and they have a more sustained interest in their play of light and shade and texture.

Some trees are conical in shape. They draw the eye not only through their mass but through the convergence of the attention on their pointed top which, as it were, contains the essence of the expression of the whole tree. Some trees with a vertical trunk, but horizontal branches, form a broad-based cone, composed of rhythmic repeats of similar branch masses, a characteristic particularly exemplified by the Rocky Mountain blue spruce. Such a tree, on account of this subordinate formality of its branch arrangement, as well as on account of its definite conical shape, has a distinct and striking individuality.

Some conical trees are fastigiate, with vertical branches held close to the trunk, forming almost a column or an exclamation point, like the Lombardy poplar. A conical tree can be used as an individual specimen, or as one of several specimens formally disposed, but it is more difficult to treat than almost any other tree as a component of a larger planting in which the individual trees are intended to subordinate their shape to that of the whole foliage mass.

There is the tree of the shape of a vase or a fountain, the notable example being the American elm, which attracts the attention less by its mass than by the expression of its growth, and which casts considerable shade without occupying any great space of ground. Then there are trees of a weeping or pendulous habit of branching which tends to lead the eye downward, in direct contrast with the conical forms. Also there are many irregular forms like that of an old pasture white pine, — characteristic, but more a matter of character than of describable shape.

Form the Expression of Mode of Growth

Each species of tree, growing untrammeled, tends to assume its particular typical form, and each species of tree has one form in youth, one at maturity, another in old age.* All trees, each after its kind, are influenced in their form by the amount of nourishment they find in the soil where they grow, by the shade conditions caused by competition with other trees and by the force of the wind. All forms of trees are made by the forms and disposition of their subordinate parts, of branches and sprays in relation to the trunk; they are a manifestation of the method of growth of the tree, and a record of the circum-

* "Of form it may, furthermore, be said that a tree is not well understood until it is understood in all the stages of its growth. The typical shape of a young tree often differs very greatly from the typical shape of the same tree at maturity, and this again from its typical shape in old age; and, in planting, regard must be paid to the question whether an immediate effect or a long-postponed effect ought to be most considered. For example, a tree set in isolation on a lawn in full view from the house ought to be beautiful in youth and at the same time give promise of beauty (perhaps of a different kind but still appropriate) in later years; whereas in planting a belt or wood in the distance, the principal trees should be so chosen that they will look better and better the older they grow, while present effect may be chiefly considered in others which are destined to be cut as development progresses."

The Artistic Aspects of Trees, IV, in *Garden and Forest*, vol. 1, p. 373. (See REFERENCES.)

stances through which the tree has come to its present state. The greater number of deciduous trees express their individuality of growth in forms of softer and less definite outline which, though absolutely characteristic for each species, are characteristic in a subtler way, and render the trees recognizable much as men are recognizable, unmistakably, but hardly through the recognition of any definitely describable feature. Some trees of no very definite branch arrangement like the apple, some trees which grow in particularly exposed situations, like the Monterey cypress, long-lived trees like the white oak, trees with wood that resists decay and can survive the mutilations of wind and snow like the cedar, any of these may through the result of exposure, or merely in some cases as the result of great age, assume picturesque forms which have great individuality and pictorial interest. Such forms may be appropriate to a free-standing specimen tree which is a point of interest in itself, or to a tree adding interest to a larger foliage mass of which it is an outlying unit, and yet individuality of this kind does not prevent trees from forming groups or masses where the unity of the individual is merged in the effect of the group.

Winter Tree Form

Deciduous trees often manifest their character more plainly in winter, when their peculiar manner of growth, their distinctive attitude of trunk and branches, is not cloaked by their summer garb of foliage. In the intricacy of snow-covered winter branches, in the lacework of naked trees against the sunset sky, never repeating itself and yet characteristic in its pattern for the oak, the beech, the hornbeam, and for every different kind of tree, there is certainly no less beauty than in the simpler and more obvious forms of the trees in their summer guise. (See Plate 15 and compare Plates 16 and 18.)

Form in Topiary Work

At the other extreme from this beauty of characteristic structure, is the effect of simplified and definite man-made shape obtainable in topiary work.* Plants so treated have suffered a fundamental change of character as units in landscape design. They have ceased to express by their form their own individuality and have become architectural or sculptural elements expressing the will of man. They are still living objects, however, and in their texture they still to some extent reveal their growth, and thus they form an intermediate step between free-

* Cf. Curtis and Gibson, *The Book of Topiary*. (See REFERENCES.)

growing plants on the one hand and such things as statues and steps on the other. (See Drawing VI, opp. p. 48, and Drawing XX, opp. p. 158.)

Plant Texture

The texture of a plant is the result of the shape, size, and surface of the leaves, their attitude and grouping on the twigs and smaller boughs, and their arrangement to make up the whole foliage mass of the plant. Large leaves, particularly such as are heavy and set stiffly upon the twigs, tend to give a plant a coarse texture and a certain strength and robustness of appearance. Small leaves, and those which are so set that they tremble upon their stalks, tend to give a plant a certain haziness of outline and an effect of softness and delicacy. Leaves numerous and close-set, like those of many evergreens, will give the foliage masses of the separate boughs, and usually indeed a whole tree, an appearance of solidity and heaviness, which even apart from its color will distinguish it from deciduous trees. Glossy leaves, or leaves which are lighter on one side, will bring to the texture of the foliage of a tree a certain gayety and sparkle, and will at times cause the tree apparently quite to change its texture at the will of the wind. The grouping of the leaves upon the twigs and the grouping of the twigs in turn upon the boughs give a different pattern in the texture of trees according to their kind. (For examples of various textures of foliage, see Plates 4, 9, 21, 25, 26, and 27.)

Texture is the form of small parts: there must exist a scale relation between any texture and the form which it clothes. The leaves of the hyacinths in the field of a Dutch grower make a textured carpet of the ground, the leaves of one hyacinth in a pot can only be considered as related forms. A forest seen from a distant mountain has a furry soft texture (see Frontispiece); nearer at hand this texture is seen to be made up of separate trees. This scale relation of texture is a very important consideration in planting design. The landscape architect might plant a mile-long straight avenue of hemlocks and the effect of the row of trees might be a straight line, although the individual trees making up this line might be twenty feet in diameter and thirty feet apart. If, however, the designer wished to plant an edging in a straight line bounding a flower bed five feet long, he would be compelled to use such things as box bushes, not more than six inches in diameter

and six inches apart, and indeed if he wished his bounding line to appear at all rigidly straight, he would be obliged to clip his box bushes so that the unit of the texture of his border would be changed from that of the individual bush to the smaller-scale unit of the individual leaf. That is, in any planting mass which is to tell as a unified shape, the texture must not be so coarse in relation to the size of the mass as to tell as subordinate shapes breaking up the perception of the main shape intended in the design.

The considerations of texture in planting design derive additional importance from the fact that whereas the size and form of a plant can be predicted only in a general way, and will be dependent on local conditions and accidents of wind and weather, the texture of a plant of any given kind is practically a definite and predictable thing, and planned effects in plant textures are therefore fairly sure of realization. A plantation may be unified by being composed throughout of plants of similar texture. Also one planted area may be differentiated from another by a difference in texture of its component plants. A projecting point in a plantation, a free-standing mass, may be strengthened by being composed of plants of dense and heavy texture. A bay in a plantation may be to some extent subordinated, or a plantation may within certain limits be given a certain additional effect of distance, by being composed of plants of a fine and soft texture of foliage. If it is desirable to make one plant mass stand out distinctly from a background of other plants, this may be done by a difference in texture between free-standing mass and background according to the circumstances of the case, for example, a sharp-cut heavy-textured evergreen against a misty background of willows, or a clump of delicate yellow birch backed by a pine wood. In a similar way a bed in a garden may be unified and diversified by a judicious choice of the textures which can be produced by the herbaceous plants in it. The corners of a bed may be strengthened by the heavy leaves of the showy stonecrop or the plantain-lily; the center of the bed may be effectively filled by the solid and lasting green of peonies; along the side of the bed the delicate misty flower of gypsophila might be paneled with clumps of iris, and even without the color of the flowers such a bed might be satisfactory in design from the effect of its texture alone.



Drawing by Henry P. White

A CORNER OF THE GARDEN, BRADFIELD, DEVON

Plant Color

The color of the foliage of plants as it appears in the landscape is only in part dependent on the color of the individual leaves as seen near at hand. A plant which carries many leaves close together, forming an almost unbroken surface, will appear to be almost of one uniform color. A plant with a more open foliage will have the general color of its leaves stippled with dark points of shadow or perhaps scattered with brilliant flecks of light where the background of the shadowy interior of the foliage mass or the sunlit space beyond shows through the screen of leaves. In a tree with thick and heavy leaves, this interior shadow will be dark; in a tree with thin and translucent leaves, the inner part of the foliage mass may be full of green light. If the leaves of the tree be of different colors on the two sides, the color of the whole tree at a distance will be to some extent a combination of these two colors, shifting in amount according to the point of view and the play of the wind. If a tree has glossy leaves, the side of its foliage mass towards the sun will be sprinkled with brilliant points of yellowish white light, and even in the shade its leaves will reflect the light of the sky and give airiness and brilliance to a color that might otherwise be heavy. It might be regarded as a fortunate fact from the point of view of the designer that in so many cases heavy and dark-green leaves have this glossiness of surface.

Effect of Character of Leaves on Foliage Color

Range of Foliage Color

Within the range of green color of foliage, from the white green of silver thorn and the yellow green of golden elder to the deep blue green of white pine or the red green of red cedar, there is as great a variety as an artist could obtain on his palette within the bounds of one color. In addition to this we have the trees and shrubs with foliage which is, in effect, of another color than green, like the purple beech, the red Japanese maple, the gray variegated euonymus, and the still more striking appearance of the plants with particolored foliage like coleus. Besides all this we have the delicate and misty shades of silver and rose and gold which clothe our deciduous trees in early spring, and the fiery red and orange and yellow and the more sober dun and buff and bronze and brown of our autumnal foliage.

Restricted Use of Other Colors than Green

In his larger compositions in color of foliage mass, the designer is usually endeavoring to make his work harmonious with the surrounding landscape. He is most often trying to make a composition which

shall be restful and peaceful in its effect on the beholder; frequently indeed, he is concerned to make his planting look as much as may be like the undisturbed work of nature. All these large considerations should make him in his choice of summer foliage very chary of departing far from his gamut of greens. In a formal planting, in an obviously artificial inclosed shrub garden, it may be legitimate and desirable to deal in golden and purple and silver summer foliage, but in the wider landscape such foliage, except for a small and carefully chosen spot of brilliance which accents a point in the composition, is likely to prove an incongruity.

Effects of Foliage Color

Within his range of greens, however, the designer has a very powerful means of accomplishing the effects which he may desire. The heavier darker colors give a plant a certain effect of solidity and weight which enables it, as would striking form or close texture, to strengthen a projection in a naturalistic plantation, or to mark a designated point in a formal composition. The darker colors, particularly of course those of evergreens, will tend to give an effect of soberness, solemnity, or even gloom to a considerable plantation of such trees, while, on the other hand, the gayety of a sunny glade would be much enhanced if the sunlight fell on the foliage of some tree of a light and sparkling green.

Contrast of Color in Differentiation of Units in Design

A judicious contrast of dark green against light green or of a warm green against a cold one will enhance the apparent effect of both colors and differentiate the foliage masses. A promontory of foliage will be relieved against the background of planting behind it and given more definiteness and force in the design if it tells for instance as a yellow-green mass against distant foliage of gray green. The same thing is, of course, true of contrast of foliage with the brown of plowed ground, or contrast with the purples and grays of rock. The possibility of choice of color in this way gives the designer an effective means of unifying areas and masses within his design and of contrasting one mass with another. He can thus make plain the composition which he has in mind, avoiding, on the one hand, a deadly sameness of color in which the different units of his composition can hardly be distinguished, and, on the other hand, a restless diversity of color-units so small that they produce merely confusion and monotony of another kind.

Foliage Color and Aërial Perspective

In large-scale design, color may be used, within reasonable limits, to enhance the effects of aërial perspective and to give to the more distant foliage a still greater effect of distance. For this result, plants of a deeper or warmer green would be placed nearer the observer; and from these the color might range through various tones to distant foliage of a light and bluish hue.

Use of "Colored" Foliage

Where there is no necessity for similarity with the foliage natural to the region, where the design is avowedly man-made, the brilliant and somewhat abnormal appearance of the purples and reds and yellows of so-called "colored" foliage may be desirable. These brilliant colors however are usually best given value and effect, as the colors of flowers are, by being set off against more usual and restful shades. Colored foliage, then, is likely to be best used either in beds enframed and backed, or as individual specimens strongly marking a definite point, or as a culminating spot of color giving a final sparkle to a mass of similar but more subdued hues. Colored foliage in herbaceous plants is sometimes desirable on account of the definiteness of the shapes which can be made from it, and the length of time for which it can be depended on to give its effect. Some varieties of it, however, are undesirable, for their color comes as near to being of itself unpleasing, as it is possible for any color to be.

Autumn Foliage

In our autumn, in regions of deciduous trees, the palette of color in the hands of the landscape designer is one of almost the maximum of brilliance, and he need not hold his hand from the most gorgeous effects which his imagination can conceive, because such effects are natural and common in the whole landscape. Even here, however, the greatest effect of brilliance is given by some contrast with a soberer hue: the red maple in the autumn is the more striking for the green of the surrounding swamp oak and alder; the clear gold of a black birch is at its best against the deep green of a pine wood. In general it is well so to arrange the trees and shrubs that the most glowing autumnal colors shall be enframed and made the most of, each as the heart of its own composition; and as the season proceeds and different trees in turn take on their brilliant color and their importance in the scene, these dominant spots of color may change from the scarlet of the first red maple through the pure yellow of the birches to the ruby, orange, and

vermilion of the other maples, the purple of the red and scarlet oak, and finally to the brown and buff of the persistent leaves of the white oak and beech.

Winter Color, Bark, and Fruit

Even when their foliage is gone, the color possibilities of deciduous plants are not at an end. There are many rich and velvety textures of gray and brown and purple in the twigs in a mass of shrubbery, or in a more distant grove of trees. Properly grouped, properly set off, the grayish yellow of Lombardy poplar, the deep black-brown of Japanese barberry, are surprisingly vivid and well worth attention in composition, and not least of such colors are the yellows and browns of open grassland and marsh. Besides these colors we have the more exotic effect of shrubs with brilliant red and yellow bark. In the planting more closely about our houses such shrubs give a bright color when such colors in plants are few, and add a warmth and interest to leafless plantations. Their value lies, however, largely in their contrast with their surroundings, and it is possible to spoil this effect by too wide-spread planting of such material.

The brilliant berries which are borne by shrubs like winterberry, high-bush cranberry, Japanese barberry give a pleasant touch of color after the leaves have fallen, although only in the case of a few shrubs do the berries persist throughout the winter. This color is rarely so intense in large masses as to be a dominant feature in the scene, and usually the various berry-bearing shrubs are used no more for their color than for the general interest they give to the design and for their value in attracting birds.

Color of Flower

In flowering shrubs and particularly in flowering herbaceous plants, the landscape designer has his greatest opportunity in the use of color. In these materials he finds as wide a color range as the painter has; indeed in some ways a wider range, for he may use on the one hand a pure white lily or a crimson cardinal flower or a flame azalea in sunshine, and on the other the deep blue larkspur or monkshood in heavy shade.

Practical Difficulties of Design in Flower Color

Unlike the painter, the landscape architect usually cannot look at the colors which he is to use before he puts them into his picture, and rearrange or modify them as his sense of color harmony dictates. He must order his plants from a nursery or raise them from seed with no

guide as to their color except his general knowledge of what color of flower a certain plant should bear, and he must arrange his plants in his design before they bloom, with only his general knowledge to tell him whether or not the resulting colors will be harmonious. There are various schemes of color nomenclature * which are known to persons interested in this subject, but no scheme has attained anything like general acceptance, and it is still impossible surely to designate a color by a name, and therefore doubly impossible to order from a nursery a plant that will certainly have a flower of a definite color. It thus comes about that the landscape designer finds himself learning from experience what plants are harmonious in their color of flower, what combinations of plants may be made to produce various color effects, and then designing in terms of this accumulated practical experience rather than in terms of absolute color.

Circumstances Harmonizing Flower Colors

Bad combinations of colors in flowering plants, though they may occur and may be very distressing, are not particularly difficult to avoid. In the first place, the plants in the same area in a garden are likely to be all at the same time bathed in sun or overlaid with shade, and so their colors may be harmonized much as those of a water-color drawing may be by a wash of one color over the whole. Moreover the color masses of the flowers are not contiguous : their color is, as it were, diluted by masses of foliage and by patches of darkness where the shady interior of the plant is seen beneath its surface. Again, white flowers are harmonious with flowers of any other color, and the designer may avoid doubtful combinations by interposing white flowers between the masses of possibly incongruous hue. Where flower colors are intended to be seen from a considerable distance, more brilliant colors, like coarser textures, may be used to advantage, and color contrasts may be effective under such circumstances, which would be harsh if they were seen near at hand in a small-scale design.

Mass Relation in Flower Color

In using flowering plants in a landscape composition, the large relation of each mass of flower to the whole scene must be remembered. It is possible to clarify and accent the whole design of a garden by a proper choice of the flower colors of the beds; on the other hand, it is possible by the use of too small and too varied color masses, to produce

* For instance, *A Color Notation*, by A. H. Munsell.

a peculiarly unpleasant kind of monotonous confusion.* Similarly in the case of early spring flowering shrubs, it is well to arrange them in sufficiently large groups so that they may be noticeable from a distance and that the individual flowers may blend in a considerable mass of color. The effect of bright color of flower may be obtained quite as much by a close massing of the flowers as by their individual bright color. A plant which bears a profusion of flowers all at the same height and concealing the foliage, like some of the dwarf marigolds, or moss pink, or cineraria will be very striking on this account. Where it is desirable that certain portions of a flower-planting be brought out in sunshine against others in shade, this effect may be accented by using yellow and red flowers in the sun, but purple and blue flowers in the shade. Almost the maximum possible contrasts of color and value may be so produced.†

Plant Character

Species and Character

Plants are recognized as different in species according to the inherent tendency each has under all circumstances to have certain characteristics of parts and to have those parts arranged in a certain way. This is true not only of the arrangements of flower and seed which mean so much to the systematic botanist, but also of the larger physical relations of more immediate esthetic importance, for instance, the growth of the trunk of a tree, the arrangement and set of its branches, the grouping of its boughs and leaves. In many cases this racial trait will manifest itself in a typical shape by which any individual of the species may be known; in other cases the typical shape may be departed from owing to individual circumstances, but there still remains the general character, which has on the observer a more or less definite

* "Variety, of which the true end is to relieve the eye, not to perplex it, does not consist in the diversity of separate objects, but in that of their effects when combined together; in diversity of composition, and of character. Many think, however, they have obtained that grand object, when they have exhibited in one body all the hard names of the Linnæan system; but when as many different plants as can well be got together, are exhibited in *every* shrubbery, or in *every* plantation, the result is a sameness of a different kind, but not less truly a sameness, than would arise from there being no diversity at all; for there is no having variety of character, without a certain distinctness, without certain marked features on which the eye can dwell."

Price, *Essays on the Picturesque*, 1810, v. 1, p. 286–287.

† Cf. Flower beds, p. 176 ff.

effect. In some instances the designer is obliged to make his compositions in terms of these characters and their resultant effects, since he is unable accurately to predict the shapes to which the plants he uses will attain.

Individual Plant Character

The character of an individual plant is the result of two factors: its species, — what we might call its inheritance, its racial tendency to assume certain typical characteristics if it succeeds in growing at all, — and its environment, — the soil and moisture conditions, the climate and air conditions, the wind, sun, and exposure. Its character is the summation of all its characteristics, — the expression in the plant's form of all the forces subject to which it has grown, both those of its own cell-changes and those of its external surroundings. (See Plates 7, 12, 20, 25, 31, and 35.)

Character and Environment

Plants from the same environment often are in some ways similar in appearance. In some cases, this is very obvious, for instance, the heavy and stunted form, the small amount of evaporating surface found in many desert plants, or the flat floating leaves of many varieties of water plants. Plants found originally in the same environment are likely to go well together as elements in planting design, sometimes because of this similarity of form, always for the practical reason that their similar original environment has made them require similar cultural conditions, and also for the associational reason that we are accustomed to seeing these plants together in their native haunts.

Relation of Plant Character and Landscape Character

If we intend to enhance, suggest, or reproduce the character of some native piece of landscape, we shall naturally tend to confine ourselves in our planting to native plant materials, both for horticultural reasons and for reasons of association, as has been said. If however we are concerned only with the compositional relations in our design, there is no sufficient reason why we should confine our effects to those which can be produced with native materials alone, when we have at hand a much wider range of effects, through the use of plant material originating elsewhere but still congruous and perfectly hardy at the place of our design.

On a Cape Cod seashore, bayberry, sweet fern, bearberry, red cedar, dwarf wild rose, and beach goldenrod are native, hardy, and good in combination, but Norway pine, Japanese barberry, Ramanas rose,

Chinese privet would be equally hardy in the same place, though all of them are foreign to this country. If however we desired to emphasize the Cape Cod character of our piece of design, we should use only native plants, producing a composition perhaps less decorative but more congruous with its surroundings in association.

Within reasonable limits the character of a scene may be enhanced by an exaggeration of the appropriate character in the vegetation. The summit of a low hill, for instance, may be made more effective by encouraging upon it the growth of those plants only which grow naturally upon high places and perhaps upon places higher than that in question. An artificial naturalistic pool will hardly produce its full effect unless growing in it and upon its shores are plants which naturally haunt wet places, and which bring to the mind of the observer natural pools which he has seen elsewhere. A design in which rocks or ledges are used in a naturalistic way is not likely to be successful unless among the rocks are made to grow such plants as in nature frequent rocky places, though smaller plants perhaps might be used to increase the apparent size of the ledge, or more delicate plants to enhance by contrast the effect of a projecting bowlder.

"Expression" and Character

We feel the total effect of a tree as being the expression of a character, almost of a personality, in a similar way to that in which we feel an effect of character in a large landscape, but often more powerfully in the case of a tree, since the tree is more simply organized and more readily personified. The sturdy oak, the weeping willow, the mournful cypress, are the ordinary examples of this personified effect in trees, and they may properly be used in landscape compositions for this effect. There is certainly something in the darkness and the rigidity of the cypress that suggests dignified sorrow; there is something in the ruggedness of a white oak, something in the uncompromising horizontality of its branches, that suggests strength; there is something in the drooping attitude of a weeping willow that suggests the posture of a person bowed in grief.

Association and Symbolism

Apart from all this, there is the matter of association. These trees have been associated in our minds with these effects so frequently in literature, that it is hardly possible for us to think of the cypress without thinking of it as the "funereal" cypress. In fact, these and other trees

have come to have a symbolic function in planting * almost as definite as that of the symbolic decorations of a church. This symbolism has been carried to a much greater elaborateness in the case of flowers than in the case of trees: we all know the modest violet, the pure lily, — indeed there is a whole language of flowers, and it might be very interesting as a play of fancy to design a flower garden in these symbolic terms.

Plantations

The plants used in a landscape composition must be considered by the designer in different aspects according as they form a wall or screen or edging, separating one scene or one area from another, or as they themselves form a number of separate objects in an open area, compositionally related one to another, or as, growing comparatively low, they serve as the surface decoration of the ground of a unit in design.

Inclosing Plantations

The separating wall between one open area and another in a scheme of any size will usually be formed largely of tree masses. If these masses cover any considerable area they should have their own character as seen from within, that is they should be subject to those considerations that apply to a bosquet or a wood. Where they inclose a formal area of any kind, their edge will usually be designed to parallel or accent the boundary of this area, and will be treated as though the woods were a plastic material to be molded to whatever man-made form might be desired in accordance with the formal design. Where these tree masses form the boundary of an irregular open space, however, — a glade, a meadow, even a well-kept and much-used lawn, — their compositional relations may well be more complicated. The principles of repetition, sequence, and balance are still to be considered, though in this case manifested in an informal way, but besides these there must be taken into account the feelings of the observer as to what are reasonable and natural relations of informal foliage masses, and these feelings will probably be based on relations which he remembers between the tree masses and open spaces which he has seen in free landscape; that is, these informal designs will be definitely naturalistic, or they will almost always have at least some suggestion of being so. (See Plates 6, 21, and 33.)

* Cf. The symbolic use of plants in Japanese and Moghul gardens, and in the designs of the Romantic landscape school.

When an open area is surrounded by plantations of trees and shrubs, two compositions are brought into being, from almost any place from which the scene may be regarded: the floor of the open area, taking its shape from the boundaries set for it by the planting, and the portion of the planting facing the observer, with its own subordinate composition and decoration, seen across the foreground of the open floor. Open meadows, lawns, and glades in parks, and similar areas on private estates, are very likely to be naturalistic, or at least informal, for such reasons as economy of ground, relation to topography, suggestion of the freedom of the country, and harmony with such outside landscape, usually informal, as is included in views from the open space. The shape of the inclosed area therefore will usually be irregular. It will be desirable to obtain both the maximum effect of extent and, consistently with this, the maximum intricacy and interest.

Outline, Modeling, and Treatment of Informal Inclosing Plantations

Usually, therefore, the inclosing plantation will be modeled into bays, promontories, and perhaps islands, which create a series of minor compositions both of the open floor and of the inclosing foliage wall. It is commonly well to arrange some of the bays so that a portion of their nearest side is invisible to the spectator enjoying the particularly designed composition. This adds an element of mystery and uncertainty, and if rightly done need not destroy the unity of the main open space. When the spectator is looking directly into a bay, the composition normally becomes one with a mass on each side, directing the attention to an area of interest in the middle. The natural treatment, therefore, under these circumstances is to make the enframing promontories heavy, strong, large, perhaps interesting in shape, and to make the planting of the inclosed bay interesting in color and in texture, but not dominant in height for fear of upsetting the unity of the form composition of the whole bay. This is the reason why flower borders around a lawn are commonly more effective in the bays and not on the points of the planting. It may be that in a composition seen from some other point of view the projecting promontory or a free-standing island is designed to be the important object. In this case the composition from this point of view must be defined, probably enframed either by objects near the observer such as overarching trees which restrain the vision to right and left, or by similar objects, such as larger points or

islands, deeper in the view, which concentrate the attention on the main object, while themselves forming a subordinate part of the same view.

It is, as we have seen, possible to secure strength of one part of an enframing plantation by its size, density, and individuality of form. Too great emphasis of these characteristics will, however, spoil the form unity of the total enframing mass. Too close an intermingling of tall plant forms with low ones, rounded shapes with pointed ones, evergreen plants with deciduous, will produce an unpleasant restlessness. In a general way it is true that the promontories in such plantations as we are discussing should be high, abrupt at the end, perhaps accented with a few aspiring or especially individual forms; the plants forming the bays should be lower, and should rise more gradually from the open to the higher background behind them. It is almost never desirable to have a low mass pocketed behind a higher one, but specimen trees, individual masses, may of course rise to a greater height from the lawn or from lower foliage.

The long axis of the promontories may often with advantage be at right angles to the principal views, and the promontories may be no thicker than is necessary to make them satisfactory screens, and good forms in the general design. Such an arrangement of foliage, in effect like the wings and scenery of a stage, will give the maximum open area together with the maximum of interest of subordinate compositions. As they are foreshortened, each on the one behind it, color and texture differences of promontories will tend to accent the diversification of the outline of the open space. As the separate bays tend to tell as separate compositional units when looked into, for the sake of variety they may be different and each may have a distinctive characteristic. These characteristics may change with the seasonal variation of vegetation, offering first flowering shrubs, then colored fruit, then autumn foliage, and so on. It is much easier to have these different effects follow each other in the same dominant location, thus getting a series of different pictures in the same enframement. It is possible, however, to have, for instance, first a promontory and then a bay assume dominance as different plants come into flower or put on their autumn color. This is more difficult because it requires that the designer shall arrange that

an object be dominant in one composition but also at another time subordinate in another.

Besides their service as adding interest to the composition as seen from within, these inclosing plantations, like other plantations, may serve to exclude from the composition some incongruous object which is without, and many designs must be made with screen plantations which have their shape and location determined in this way, or by their service as a windbreak, or as a mass seen from a distance in some other scene. Once accepted as necessary parts of a design, however, such plantations should be so treated as to bear their part in every important composition in which they appear.

Hedges

A hedge is a foliage wall which, being parallel-sided, expresses on the outside the form it incloses within. (See Drawing XX, opp. p. 158.) A hedge may be very rough in texture, being little more than a somewhat formalized line of trees and shrubs, or it may be carefully aligned, trimly clipped, decorated with niches for statues, perhaps paneled between stone posts; treated, that is, as far as possible like an architectural wall. The plants forming hedges impart but little of their own character to the resulting structure; its shape is that put upon it by the design of the area which it bounds. A similar effect to that of a formal hedge may be obtained by the use of a lattice fence or even a wall, thickly covered with a close-clinging vine like Boston ivy. Such a structure is more quickly made, and takes less room on the ground than a hedge of equal height. Simply designed and well vine-covered, it may tell only as a foliage mass; more commonly, however, it is merely decorated with vines and tells more as an architectural object in the design.

A formal row of plants spaced some distance apart may be effective as a screen if the line of sight falls upon them at such an angle that they are foreshortened one upon another. When, from a point of view more or less at right angles to the line of plants, the same screen must be open and not continuous, such arrangements of free-standing evergreen trees, or even of the repeated trunks of deciduous trees, may well meet this double need. Similar arrangements at smaller scale, of clipped evergreens or vine-grown posts connected with garlands, not high enough or perhaps not broad enough to serve as a screen, are often useful as lines of demarcation of formal areas.

As the two sides of a hedge are parallel, a hedge bounding a formal area is formal also on the outside. This gives rise to a difficulty if the area outside the hedge is not intended to be formal, and the hedge makes a considerable part of its boundary. It becomes necessary to introduce informal planting outside the hedge, in spite of certain difficulties of upkeep which such an arrangement often causes, in order to avoid what would almost certainly be ugly, — a relatively small inclosed area, with nearly half of its inclosure formal and the rest informal.

Low Hedges and Edgings

When hedges are low enough to be readily seen over, their function in design becomes somewhat different. They no longer bound and terminate the composition, they define and accentuate the boundary between two masses within the same view. (See Tailpiece on p. 23.) Both masses being visible at the same time, both forms must be studied in the composition. The low hedge, or at a still smaller scale the edging, bounds not only the flower bed, but also the grass-plot or path or whatever other area lies next it. Usually the edging forms a part of the mass of the bed, but, being of a closer texture and more definite form, gives crispness and definition to the bed outline. Sometimes the edging rises higher than the interior of the bed, or is, by its color or density, much more conspicuous than the material of the bed, so that the edging takes on itself a more individual function as a linear unit in the design. Sometimes the edging is so low — as, for instance, a grass edging — that it hardly tells as a part of the planting of the bed, but rather as a definite boundary to the cultivated soil within it. A conspicuous formal edging may sufficiently formalize a bed, the other plants in which are loose in texture and various in form or color; but close texture and continuity of material are seldom desirable in an edging about an informal mass, and almost never so if there is any naturalistic feeling in the design, as witness the unfortunate treatment in some of the French parks, where a naturalistic shrub and tree group is strangled with a rope of geraniums.

Specimen Trees and Shrubs

A single foliage mass, if it is to stand as an independent unit in a landscape scene, must have of itself unity and individuality to make it worthy of its place in the composition. Such individuality may be attained by a mass or close group of plants, as in the case of some shrub masses, tree groups, and notably flower beds, but it is usually more

completely expressed by an individual plant, tree, or shrub or flowering plant as the case may be. Striking color may serve this purpose, for example a purple beech, a golden retinispora, or an orange mass of autumn helenium in flower; of itself, but also particularly in connection with striking form, a close and definite texture will serve, as for example a clipped privet or a tree with naturally close-growing foliage like a red cedar; but most important of the characteristics which give individuality to plants used in this way is shape. This individualizing shape may be merely a simple and definite shape easily recognized. This may be natural to the plant, like the broad-based conical shape of a blue spruce, the rounded cone of an arbor vitæ, the shaft of an Irish juniper, or the spire of a Lombardy poplar. Or the definite shape may be imposed by clipping or training, making the plant in effect an architectural or sculptural object like a vase or a statue, such an object as the trimmed evergreen pyramids or topiary peacocks of English gardens, or the standard catalpa or standard weeping elm more commonly obtainable from American nurserymen. Other definite and man-made foliage forms may be produced by growing vines on various small free-standing shapes of lattice or post, such objects as for instance a rose-wreathed pole crowned by a bird-house, or a trellis of any designated shape, perhaps standing free, though more often backed by a wall and covered with a flowering vine. On the other hand, this individualizing form may be the expression of the character of the plant, perhaps of its past history and associations, — as the gnarled growth of an old apple tree, the picturesque attitude of a wind-blown cedar, or the aspiring growth of a tall mullein; or this natural expression may be enhanced and guided by the hand of man, as in the trained maples and evergreens of Japan.

A "specimen" tree or shrub, then, is properly one which has enough interesting characteristics to make it repay the attention which its isolated situation inevitably brings upon it. Specimens however should not be treated in landscape design, except perhaps rarely in arboretums, merely as interesting objects in a museum: they should bear their share in the esthetic organization of the whole composition. (See the specimen evergreen in Plate 28.) A specimen may be so fine a thing that it is worthy of a dominant position to which all else in

the scene is subordinate, like the centuries-old flowering cherry tree in the court of a Japanese temple. A similar composition might exceptionally be made of a magnificent group of flowering shrubs, a fine old oak tree, a weeping mulberry made into a summer house, standing in the midst of a small lawn, protected, and enframed by the boundary plantations. But so great dominance as this in composition is rarely assumed by a plant form. Specimen trees or shrubs in formal compositions are more commonly well used ranged in rows along a walk or road, standing sentinel on each side of a garden gate or an entrance walk, or giving strength and definiteness to the corner of a bed. In informal or naturalistic compositions, specimens may stand free just off a promontory of a border plantation or they may arise singly or in groups from a projection of the planting which must be emphasized or from an area of planting which must be diversified. In any case, whether in formal or non-formal design, their function is to draw attention to themselves and so to the place where they are, and they should be such and so situated that this attraction of attention makes for harmony and not for restlessness in the whole composition. (See Plate 6.)

Tree and Shrub Groups

Isolated groups of trees, shrubs, or herbaceous plants should be influenced in their position in the scene by the same general compositional considerations which we have just discussed in relation to specimen trees, but the group will have less individuality than the specimen, it will be larger on plan in proportion to its height, it can less afford to be very different in appearance from the rest of the composition, and it will therefore be found more often closely related to other groups and to the boundary masses, and playing a less individually dominant part in the composition. One reason for so much of the ugliness of "Capability" Brown's "clumps," was the fact that, occupying important situations, they did not have sufficient individuality of form to be worthy of their place.*

In naturalistic plantings, equally important with the considerations of pure composition is the consideration of natural relation of the speci-

* "We have, indeed, made but a poor progress, by changing the formal, but simple and majestic avenue, for the thin circular verge called a belt; and the unpretending ugliness of the strait, for the affected sameness of the serpentine canal: but the great

men or the group to the other plants in the scene. The springing up of young trees from wind-blown seeds of a parent tree, the transportation of fruits by birds, of nuts by squirrels, to shrubberies or woods to be concealed or eaten in safety, the tolerance of certain species of plants for the shade of others, the similarity in soil requirements of certain plants, and a thousand other combinations of circumstances arising in the economy of nature, tend to make certain groupings of plants repeat themselves in natural landscape. While some knowledge of the reasons for the origin of these natural groupings is a desirable possession for the designer, the groupings found in nature are so varied, so difficult in most cases to trace to their causes, that what the good designer really uses in his work is a feeling for congruities and incongruities of natural plant arrangement acquired through long experience, and amounting in effect to an instinct rather than to a number of reasons to be stated in words.

Composition of Groups

The interest and value which a group of trees or shrubs may have in a landscape will depend largely on the compositional relation of the individuals which make up the group. The main form of the group may well be decided by its relation to the whole scene: it may be rounded, or aspiring, or crouching, according to the purpose it serves in the total composition. But within these limitations it is possible to get great diversity without destroying the unity of the group. For instance, the pointed and aspiring forms of trees, particularly those that are symmetrically conical, will serve to accent a portion of a group, to dominate it, or to crown its highest part, in any case in very sharp contrast to such rounded or other less conspicuous tree forms as there may be, but not necessarily destroying the mass unity of the group. The composition of any group of plants will depend on the point from which it is seen, and, except for circular arrangements, will be different from each different point of view. As in all his compositions, then, the landscape designer must study his tree and shrub groups from those few points of view which are the most important, and he may consider himself fortunate if he achieves his results as seen from these points of

distinguishing feature of modern improvement is the *clump;* a name, which if the first letter were taken away, would most accurately describe its form and effect."

Price, *Essays on the Picturesque*, 1810, v. 1, p. 244.

view, and escapes producing effects which are noticeably bad from other and subordinate points. The color, the texture, and the character and suggestion of a plant remain substantially the same in whatever aspect it is seen; moreover these characteristics may be predicted with considerable certainty even when the plants are set out at very small size, whereas the exact shape of the plant is to some extent a matter of accident. For this reason, these characteristics other than shape bear an importance in the designer's choice of plants greater than would be indicated by their effect in any given design.

A group of trees or shrubs should usually tell in the composition not as an undifferentiated mass but as a massed group of individuals, that is, as a composition in itself, in which the separate units are to some extent different and in which this difference is recognized in their arrangement. A group of two trees of approximately equal appearance is almost impossible to handle in composition except when it marks an axis which runs between the trees. Two trees in a group are much more likely to be effective if one is dominant and one subordinate, for example, one aspiring and dense in texture, the other rounded and loose, or one overarching and tall, the other low and spreading. Even at its best a composition of two trees is difficult to manage and the designer usually finds himself dealing in groups of three or more. A good group of three in a similar way will usually have one tree dominant and two subordinate, by whatever means of shape, color, or texture this may be accomplished. It may be said generally however that it is best to seek the shape composition first, and then to enhance, through an appropriate choice of their color and texture, the effects first given the separate plants by their shape. The greater the number of trees in an informal group, the less importance attaches to the exact location of each tree, and the more to the general simulation of a natural arrangement in the group as a whole.*

Shrub Beds

In shrub beds, as they are used in informal or naturalistic design, the same general considerations of plant diversity and contrast hold

* For notes and diagrammatic illustrations of possibilities of grouping see, for instance, J. Major's *The Theory and Practice of Landscape Gardening* (London, 1852), the chapter, The Arrangement and Grouping of Trees, p. 151–162; André's *L'Art des Jardins* (1879), noting especially in the chapter, Plantations, p. 534–537 and

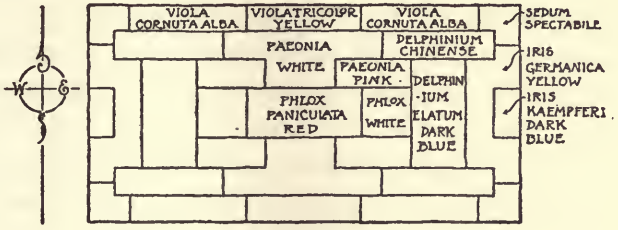
true which we have already discussed more particularly in relation to trees. In formal design, however, shrubs may be used merely as a material from which masses of man-determined form may be made, which may owe little of their interest to any variation in the character of the foliage of which they are composed. In the informal planting of a small estate the separate varieties of shrubs may be arranged in fairly definite segregated groups in the whole planting, just as flowering plants might be arranged in a bed, both for the mass effect of their peculiar characteristics whatever they may be, and because the designer is not averse to the man-made effect so produced. In larger and more naturalistic schemes, a blending of mass into mass is desirable, a use perhaps of plants of several different kinds intermingled in any given space to preserve the apparent naturalness of the mass of the plantation even at some sacrifice of crispness of minor effect.

Herbaceous Beds and Borders

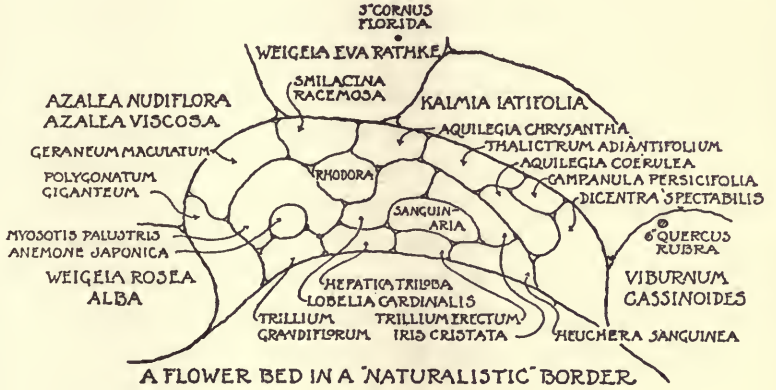
Herbaceous plants in masses in the landscape have their primary importance through their most striking characteristic, — their flowers. In conjunction with trees and shrubs in informal or naturalistic border plantations, their comparatively loose texture and delicate form make them things to be backed and protected by the other coarser plant materials, but their brilliant flowers enable them to give a dominant interest to the recess in which they are set, which has already been marked, by its enframement, as the center of the composition. (See Drawing XXI, opposite.) When this kind of flower planting is designed, as it often is, to be seen at a considerable distance, the effects may be, as we have said, throughout more powerful, the separate masses of color larger, the plants themselves larger and coarser, than is the case in smaller-scale compositions.

As the eye commonly ranges along the more distant flower beds at an angle almost parallel to the ground, a mass of color to show any extent to the eye must have considerable extent on the ground in a direction measured away from the eye. This leads the designer seeking this particular effect to lay out his important flower masses more or less in elongated areas radiating from the important viewpoint, if this can

p. 553, which pages are translated in article, *Natural Grouping of Trees*, in *Landscape Architecture*, Jan. 1917, v. 7, p. 83–87; also Meyer und Ries, *Gartentechnik und Gartenkunst*, in chapter, Die Bepflanzung im Naturstil.

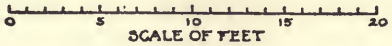


A FLOWER BED IN A FORMAL GARDEN



A FLOWER BED IN A "NATURALISTIC" BORDER

DIAGRAMS
OF TWO DIFFERENT TYPES
OF HERBACEOUS PLANTING.



DRAWING XXI

be definitely located. On the other hand, he may get a succession of bloom apparently in the same place, by setting narrow beds of plants at right angles to the view, one behind another, so that each when out of bloom will be concealed from the eye by its neighbor in bloom.

If the herbaceous bed forms a part of a shrub mass which is informal though not naturalistic, it may be well to have the bright color of the flowers form a definite spot in a composition in which the separate parts of the shrub beds as well may have definite lines of demarcation. In plantations in which there is any considerable feeling of naturalistic design, however, the flower masses may well be blended into each other and into the shrubbery as the shrubbery masses are blended into each other and into the trees. The areas of brilliant color due to the grouped blossoms of any particular kind of plant should be large enough to be effective in the composition, and they may indeed be very large without being for that the less natural in appearance, but their edges should not be definite as they commonly are in the beds of a formal garden. Among the shrubs there may be summer lilies and fall asters, and perhaps in front of the shrubs in places not contiguous with the main flower beds there may be little subordinate colonies of bloom.

Flower Beds as Parts of a Garden Inclosed

A flower bed in a garden should have a boundary with a degree of definiteness in scale with the whole composition. In a thoroughly formal design the beds may be defined in architectural lines by edgings of stone or brick or concrete. In a less rigid scheme the beds may be edged with grass strips, or even, exceptionally, with rows of small stones. In a consistently loose-textured garden the flowers may, as it were, spill out of the beds on to the walks. This is usually best done when the walks are of brick or stone. A grass edging would be destroyed, and a stone edging or anything similar would be at least for a time concealed. Often it seems well to mark the boundary line of the bed by planting, that is, to use some kind of plant edging. This may be something which accents the line and form to the maximum and does little else, for example, box; or, usually at the sacrifice of some definiteness of form, it may itself carry flower, for example, sweet alyssum, iris, peony.

Arrangement of Plants in Relation to Form of Bed and Form of Plants

The arrangement of plants in a formal bed should be such that the form of the plants accents the form which is created by the outline of

the bed. The central part of a free-standing bed, the back of a bed against a boundary, is usually the best place for the taller plants. The corners of a bed may well be planted with something of close texture and definite form and of greater height than the plants occupying the sides between the corners. The ends of beds may sometimes be accented in the same way to good effect. (See again Drawing XXI.)

In planting a formal garden, symmetry of important balanced points is desirable, but as in all formal design, symmetry is undesirable or at least ineffective if carried beyond the point where it can be perceived. The planting of one subordinate side bed need not echo that of the corresponding bed on the other side of the main axis, unless the two beds tell in balance in the composition. Indeed we may often for local reasons have the beds themselves different in form and not spoil the general composition.

Arrangement of Plants in Relation to Time of Bloom

We must plan for a succession of plants in bloom if we intend to have the bed interesting at all times. We can do this in two ways: we may plant perennials throughout in such a way that one kind of flower after another comes into bloom; or, we may plan to remove certain plants when they are through blooming and to replace them by others, in which case we should be dealing in part with annuals raised from seed elsewhere and put in when ready to take up their share of the work. When one flower is removed and replaced by another there is a temporary lack of height in the bed. If this takes place in the middle of the bed, the mass effect is likely to be bad. It is therefore often good practice to choose for the middle of the bed strong-growing perennials which are good in foliage when not in flower, for example, peony, or Pennsylvania anemone.

In either case there are two possible conceptions of the arrangement of the plants within the bed. We may so intersperse our plants of different times of blooming that when one dies down, another springs from beside it and practically occupies the same space when it, in its turn, comes to bloom. Or, we may have certain considerable areas devoted to one plant, which when the plant is out of bloom, either remain green with its foliage, or, after a brief period as brown earth, are again filled with some other plant. In this last case, in formal beds, it will often be necessary to arrange the individual plants for-

mally. That is, in a small formal garden, if we use enough different plants to give our client the variety that he wants, we are likely to have the separate groups of plants contain at times not over ten plants, and an informal arrangement of these is likely to be incongruous if their separate form is noticeable at all; for example, this might be so with foxglove, but not with dwarf marigold closely planted.

Arrangement of Plants in Relation to Color

Plants which are dominant in shape need not also be dominant in color; indeed it is often better that they should not be so. The high plants, the dense plants, are thereby the better enframement for the spaces between them, which spaces can therefore be properly occupied by those plants which are most striking in color. Thus the sides of the beds are likely to be the best locations for the greatest display of bloom.

The flowering plants will normally be arranged in a formal bed to make some pattern harmonious in color and properly related in its shape to the shape of the bed. The shape and height and the color and texture of the different flower masses must be studied together, so that the pattern shall be consistent and recognizable, with its dominant and its subordinate parts effectively arranged within the bed. Since the different plants come to their full height at different times and bloom at different times, the same bed will present a sequence of different patterns during the season. Even the simplest bed, when planted with perennials only, may be arranged to give at least two different studied effects: the main flower display enframed by the taller plants and the flowering of these tall plants when the lower plants are out of bloom.

Grouping of Plants According to Character

There are, then, a considerable number of characteristics of plants which must be taken into account in making a planting plan for a formal garden-bed, or any planting plan, for that matter. Principal among these characteristics are: form, color, texture, time of bloom, species of plant, and cultural requirements. These, together with the particular associational flavor which many plants bear in our minds, give each plant a character, and enable us to group plants according to these characters, — we can have evergreen gardens, spring gardens, rose gardens, alpine gardens, old-fashioned gardens, or parts of a garden may be similarly unified.

Planting as Surface Decoration

In the clothing and decoration of the surface of the ground, plants of low growth find an important place in landscape design. They

may simply give to the ground surface a pleasing texture and a sufficient cover like that of a lawn or a hayfield, or this texture of low-growing plants may call attention to itself by presenting a pattern in the design. This pattern may be on the one hand perhaps like the irregular flecking and mottling of the surface of an Alpine meadow by the groups of different plants which grow there, each in the situation where the distribution of its seed or its necessities of soil, sun, and water have placed it, or on the other hand the pattern may be such as a designer produces on the flat surface of a formal parterre, a formally-composed arrangement of areas and lines, related in all its characteristics to the rest of a formal scheme, and serving much the same esthetic purpose as does the pattern of a Persian rug in the total composition of a room.

Carpet Bedding and Parterres

Plainly it is purely a question of scale whether dispositions of foliage of this kind shall appear to be a texture, or a pattern on the surface of the ground, or an arrangement of individual objects resting on the ground. (Compare Plate 29 with Tailpiece on p. 23.) A parterre covered with carpet bedding will tell merely as a decorated surface so long as the projection of the decorating plants above that surface is not noticeable in comparison to its whole extent; and certain points in the design may be accented by objects of a greater vertical dimension without necessarily destroying the essential flatness of the whole area. The fact that the decorative areas in carpet bedding can all be seen at once, and are not, as is often the case with the decorative beds in a flower garden, partially concealed one behind another from many points of view, puts a special emphasis on shape relation in plan in designs of this kind. Given a reasonably flat piece of ground, a large area can be treated in this way without any other features than the beds, and a very striking result can be produced. This kind of work, being a thing which is renewed and often changed from year to year, has fallen particularly into the province of the gardener rather than into that of the professional designer. These causes among others have combined to produce in Europe and in this country a great deal of strikingly bad design of this sort. There is nothing esthetically impossible about the method itself, and the ugliness of the many examples with which we are familiar can almost always be directly traced to the violation of some of the simple principles of composition which we have already discussed.

The formal design of the carpet bedding must be inclosed and enframed by a sufficiently powerful formal boundary, and there must be some size, scale, and character relation of the whole bedding design to its inclosure. The neglect of this consideration has produced many formal carpet bedding designs informally inclosed or uninclosed, and very many small formal flower beds floating unrelated and unsupported in a composition otherwise entirely informal or naturalistic. In carpet beds it must particularly be remembered that in marking out one group of shapes upon the ground, the intervening areas are also inevitably given shapes, and either these secondary shapes must also be beautiful, or the primary shapes must attract attention so strongly that the others remain unnoticed to practically all observers. Much of the ugliness of shape of the carpet bedding which we see is due to the inherent ugliness of the designed shapes, but part of it is due also to the fact that the shapes which strike the eye of the observer are not those which were primarily in the mind of the man who laid out the bed.

There must be a scale relation between the size and spacing of the individual plants which fill a given area of carpet bedding and the size of the area itself. A satisfactory effect may be produced by decorating a certain area with obviously separated dots, and an effective contrast is possible between such an area and one so thickly planted as to tell as a uniform wash of color, but there ought to be no doubt in the mind of the observer as to which of these effects the designer intended. There should, too, be no doubt as to whether the design is the decoration of a flat surface or a grouping of individual objects. A carpet bedding design may be accented by certain vases or clipped trees or flower beds of a considerable vertical dimension, as we have said, so long as these are in scale with the whole design, but if too many such objects are introduced, the whole composition becomes ambiguous and confused.

It is not easy to use too bright color in carpet bedding designs. They lie commonly in the full light of the sun and are thereby to some extent harmonized; they are usually the decoration of large open spaces which are in public ownership or at any rate enjoyed by large numbers of people, most of whom have no very refined sense of color. A definite and powerful color scheme, then, is usually desirable. Pure colors, primary colors, are likely to be better than delicate combinations of

slightly different colors, and of subdued hues; but all this is no excuse for the raucous color discords which we so frequently see in public gardens and parks and often too in private parterres, which may be avoided by any designer with a color sense, since the plants of which the beds are made are well known and their color is predictable with sufficient accuracy.

It is perfectly legitimate that the shapes in this flat decoration should represent something, should have some significance and association of their own, but the associations of the different units should be reasonably congruous and the shapes and colors produced by these pictures or insignia in flowers must still form harmonious parts of the shape and the color of the whole design. Our parks are full of instances where the gardener was so much interested in each pictorial or emblematic composition for itself that his total design has in effect no unity except that of a museum of curiosities.

Ground Cover

In naturalistic scenes the use of low-growing ground cover is subject in a general way to the same considerations that apply to the taller-growing shrubs and herbaceous plants, but the smaller materials give the designer an opportunity to display and enhance the modeling of the ground and at the same time to give an additional interest and to differentiate area from area by a choice of different and appropriate ground-covering plants. A bed of ferns may grace the foot of a rock, or a mat of partridge vine run over it, the darkness of a dell may be made deeper by a carpet of blue-green myrtle, a sunny open space may be made still brighter by the yellow green of moneywort. The choice of ground cover in naturalistic design is likely to be motived much more by suitability to the growing conditions and the landscape character than by considerations of the form relations of the areas differentiated by this planting. (See Plates 3 and 20.)

Turf

The commonest ground cover throughout our works of landscape design in moist climates is turf. Having an inconspicuous texture and a most restful color, it subordinates itself to the surface which it covers. It serves as a harmonizing background against which flower beds, shrub masses, tree groups, or structures are relieved. (See Plate 30.) Together with paths, in formal garden designs, it makes a definite but subordinate ground work of the pattern in which the flower beds

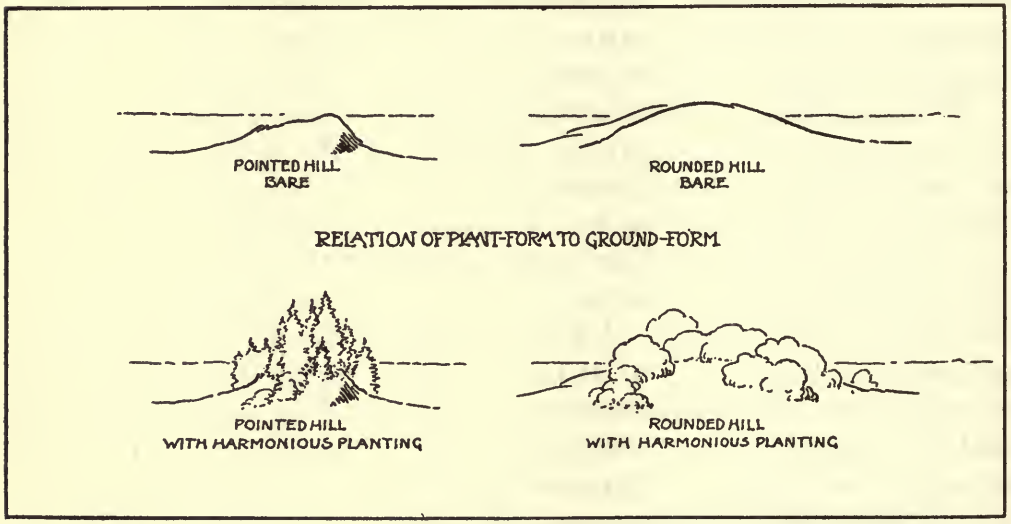
are the dominant areas. In naturalistic design it reveals, more than any other material, the form of the ground which it clothes, and being more than any other ground cover resistant to the damage from trampling feet, it has come to be the chosen surface of the open spaces of our parks and estates. (See Plate 33.) The desirable fineness and smoothness of its texture will depend on the refinement of finish of the design, and the amount and expense of upkeep thereby entailed will depend on the intensity of its use. The effect of an English lawn before some well-kept great country house is worth the century of care which has brought it to its perfection. In an outlying metropolitan reservation, or before a summer cottage on the rugged Maine coast,* a grass area cut but twice a year, and resembling a pasture rather than a lawn, might well be not only less expensive but also more appropriate and beautiful.

Planting in Relation to Topography

In the smaller naturalistic scenes where the ground surface as well as the planting masses may be modeled by the designer, there are certain relations of ground form and form of planting mass which the landscape architect will seek. In larger landscapes these relations will also be valuable, but they are obtainable by the choice and location of the planting rather than by the more expensive grading changes in the surface of the ground. A mass of planting usually looks best if the ground slopes slightly up to its foot. A base may be thus given to the planting mass and a sequential relation suggested between the planting and the open ground on a small lawn, with a change of ground elevation of only a few inches. In larger schemes this may be a greater undertaking, but sometimes where the ground surface rounds over and slopes down in a place where the designer would prefer that at least for a few feet it should remain level or slope up, the difficulty may be overcome by placing lower shrubs where the ground surface still maintains a satisfactory modeling, and then behind these, at a lower level, larger shrubs or trees which shall carry the line up with their surface and not down with the now concealed surface of the ground. Similarly an elevation which is too slight to bear its part in the design may be increased by planting, which may be highest on top of the knoll, lowest where it merges into the flat; and thus very considerable effects of

* See Charles Eliot's *Anglomania in Park Making*, an article reprinted in *Charles Eliot, Landscape Architect*, p. 215–218. (See REFERENCES.)

ground modeling may be produced in the inexpensive material of plant foliage. Here, as always where planting is used to screen out some undesirable thing from the composition, the winter effect must also be considered, and if this is important either very close-growing deciduous plants or else evergreens should be used. When the knolls and hollows are small, and consequently the planting plays a proportionally more important part in the design, the scale relation of planting to topography must be particularly studied, so that it may explain the topography and not obscure it. A little hill might be made more effective by a planting of hawthorn, but quite dwarfed by a grove of elms.



DRAWING XXII

In large compositions where the actual height of any tree-planting which might be made would add but little proportionally to the height of the hill which is to be planted, the form and character relation, rather than the relation of size, between the planting and the ground becomes proportionally more important, although in any naturalistic design it is to be considered.* A sharp-pointed and craggy hill may perhaps best be crowned or accented with trees of aspiring form; a round and gentle hill might have upon its top an irregular and crouching mass of round-headed deciduous trees which carry their branches close to the ground.

* Cf. Plant Character and Landscape Character, p. 165.

(See Drawing XXII, on p. 184.) Many other less obvious form relations in composition between plant and ground are of course possible, but often some economic exigencies of the design will fix the form of the planting, and its esthetic relation to the topography will be rather one of character. *

Waterside Planting

The planting which borders the shores of a natural or naturalistic pond should bear in design much the same relation to the water surface that planting surrounding an open naturalistic lawn might bear to the surface of the turf; and the pleasant relations of accented promontory, enframed bay, and free-standing island are much the same in each case. (See Plates 4, 26, and 32.) The line between water and land however is a more important thing in the composition than the line between turf and shrubbery. This is partly due to the flatness of the water surface which necessarily meets the shore everywhere in a definite line, but largely due to the reflection of the shore in the water. The planting which stands on the brink shows practically its whole form in reversed reflection; the planting standing back from the shore shows its tops only, and in the case of a small pool or in any other circumstances where the observer looks down at any considerable angle on the surface of the water, objects standing at any great distance back from the shore are not included in the reflection, — a fact which gives to planting directly on the shore-line a special importance in the scene. Particularly where the surface of the water is quiet, both the real shore and its reflected counterpart must be considered in the composition. An overhanging white-barked birch tree might not be, alone, too striking an object in the composition, but it might prove so when reënforced by its reflection beneath. A low bank of shrubbery which in itself was not sufficient boundary for a river surface in a certain landscape might be quite enough for its purpose when doubled by its image in the water. As the line of sight of the observer rises from its point of reflection on the water surface to where it strikes the further shore, any overhanging planting and any deep shadows within the plants on the water's edge will tell with their full effect. On the other hand, a low and shelving shore, and particularly a shore grown with reed and sedge that conceals the water's edge, will be diminished and obscured in reflection.

* For Rock Planting, see Chapter VIII, p. 147.

Often the designer may judiciously somewhat accent all the effects of his shore treatment because the observer is kept at a distance by the foreground water-surface, but if there is boating on the water the conditions may well be reversed, and the planting may then be arranged to be inspected close at hand.

Planting in Relation to Architectural Structures

In its relation to architectural structures,* planting bears its part in landscape composition in these ways: it enframes, limiting the composition of which the structure is the dominant object and concentrating attention upon the structure; it leads up to the structure as a subordinate mass to a dominant one,—"tying the structure to the ground," as the phrase goes; and it decorates, perhaps paneling the face of a structure with chosen patterns of green, perhaps changing the texture of parts of the façade from that of stone to that of leaves.

Planting as Enframement

A building may be entirely embowered in trees or ensconced among them (see Drawing XXV, opp. p. 196, and Drawing XXVI, opp. p. 198); a small house may be actually completely canopied by a great tree; but more commonly the enframement of a building by trees is an effect best seen from some one point of view, a point of view usually in which the trees are nearer to the spectator than is the house. (See Drawing XXIV, opp. p. 192.) An overarching tree like an elm is particularly effective for this purpose, because it not only bounds the composition on the sides but to a considerable extent upon the top, and its spreading shadow upon the ground may inclose the view at the bottom as well. But enframement only upon the sides is often effective in landscape composition, and even trees like Lombardy poplars may serve as satisfactory enframement for a building.

Though a tree may form the boundary of a definite and recognizable composition of which a house is the dominant object, still the whole shape of the tree will be seen in relation to the shape of the house in the broader landscape, and the shape harmony of these two objects in the composition cannot be ignored. A building however is so utterly different an object from a tree in form, in texture, in association, that it is quite idle to attempt to predict for an unknown case whether the relation between house and tree should be that of similarity or that of contrast. There are cases, that is, where a round-headed oak would be

* Planting in relation to roads is discussed under Roads, in Chapter X, p. 223.

the appropriate tree to form a part of a setting of a low building of level skyline; there are also cases, however, where a group of Lombardy poplars would better serve this purpose in the composition.

The span of a bridge* is necessarily somewhat bounded and enframed by its abutments when it is looked at along the reach of water which it crosses, but the compositional strength of the masses on each side between which the bridge springs can be much increased by planting which rises well above the level of the bridge. (See Plate 32.) Such planting serves also, of course, as pictorial enframement for the bridge itself. The best outlook from the bridge is presumably up or down the stream from well out upon the bridge-span, and these same plantations will give some sense of enframement to this view as well.

Planting as Transition between Ground and Structure

Planting may concentrate the attention upon a structure by converging lines in perspective, as where an allée of trees leads to a building or to its entrance; in this case there is also enframement of the principal object in the view. (See Drawing XI, opp. p. 82.) In the relation of minor planting masses to a building, two effects are commonly sought: first, to fix the attention upon some important part of the building, as where a shrub mass is placed on each side of and leading up to a door, a French window, or perhaps a gabled end or pavilion of the house; and second, to make a sequential connection between the horizontal lines of the ground and the vertical surface of the building. (See Drawing XXIII, opp. p. 190, and Drawing XXVI, opp. p. 198.) Where planting is carried out from the corners of a house, such an arrangement serves also in a way as enframement and foreground for the façade of the house between the two corner plantings. The appearance of the house may be greatly improved by a simple shrub planting, but in modern American practice, particularly on smaller places where often little skill is employed in the design, the planting of shrubs about the bases of buildings, for these purposes, for decoration, or merely from a restless desire to take away every effect of bareness, has been considerably overdone. Some buildings, notably perhaps the Tudor country houses, are at their best when their walls rise clear from the clipped turf or the paved terrace. (See Drawing VI, opp. p. 48.) A woodland cottage might look well if

* Cf. Chapter X, p. 216.

entirely surrounded by small planting, but with the ordinary dwelling-house it is usually a mistake completely to surround its base with an indiscriminate garniture of shrubbery.

Planting as Decoration of Structure

Planting may be used purely for the decoration of the façade of a building, as, for instance, where vine-covered lattices of definite shapes are used as a part of its architectural design. To some extent this is the effect of specimen evergreens placed close to the building on each side of an entrance. Formal rows of evergreens or architecturally-clipped plants may be set out in the ground or placed in tubs and may, at least in certain views, serve as a paneling and decoration of the lower part of a building façade. Similarly, vines or flowering plants in window-boxes may add a note of color or an area of green to the architectural composition; or vines may actually be grown over the surface of the building, perhaps to relieve some harshness of form, perhaps to give panels of green, perhaps even completely to change the texture of the building to that created by the leafage of the vine, and to throw a charitable mantle of vegetation over a multitude of architectural sins.

It is to be noticed that the texture of the leafage of any vine is more diffuse and weak than the texture of any material used in architectural construction, and that therefore if this vine-texture is to cover considerable areas of a house or of a wall, these vine-covered areas would better be wall rather than post, curtain rather than pavilion. That is, the areas which are less important, less functional architecturally, as it were, should be given the softer texture. (See again Drawing VI.) Another decoration of architectural façade by planting which is well worthy of the designer's serious attention is the falling of the shadows of trees on the sides of a building. An otherwise monotonous expanse may be redeemed by the shadow tracery of winter branches or the dappling of summer shade; the main entrance of a building may be made more important by the shadows of two trees which subdue the walls on each side of it.

CHAPTER X

DESIGN OF STRUCTURES IN RELATION TO LANDSCAPE

BUILDINGS IN RELATION TO LANDSCAPE — Buildings subordinate to natural character — Buildings dominating landscape — Form relations of buildings and landscape surroundings — Building groups — Texture relations — Color relations — SHELTERS AND PAVILIONS — TERRACES — Parapets — Retaining walls — Terrace banks — STEPS — In formal design — In naturalistic design — WALLS AND FENCES — Walls: materials and decoration — Fences, lattices, and grilles — GATEWAYS AND GATES — STATUARY — Its value among decorative objects in design — Its setting in landscape composition — ARCHITECTURAL AND SCULPTURAL WATER FEATURES — Grottoes and wall fountains — Cascades — Water-ramps — Free-standing fountains — Pools and basins — BRIDGES — Their forms and materials — ROADS AND PATHS — Roads in naturalistic landscape — Form of roads — Road intersections — Views of and from roads — Planting and roads — Paths in naturalistic design — Form of paths — Roads in formal design — Paths in formal design — Materials of roads and paths.

Buildings in Relation to Landscape

In determining the esthetic relation of a building to the landscape of which it forms a part, the designer must first decide whether as a whole the particular scene is to be considered as expressing the character of a natural landscape, or whether, on the other hand, it should express by its style the dominance and the directing will of man.

Buildings Subordinate to Natural Character

If a landscape character is to be dominant in the scene, then the building must be in some way subordinated. It may still be the center of the composition, indeed it may still be more interesting than any other one thing in the composition, but the scene should give the effect that the building is related harmoniously to a landscape which as a whole expresses its own natural character. The building may exceptionally be made harmonious with the landscape in form; it may have an irregular shape, perhaps a rounded thatched roof (see Drawing VII, opp. p. 50), and it may be closely fitted to irregularities of the ground. (See Drawing XXIV, opp. p. 192, and also Plate 36, for adaptation of

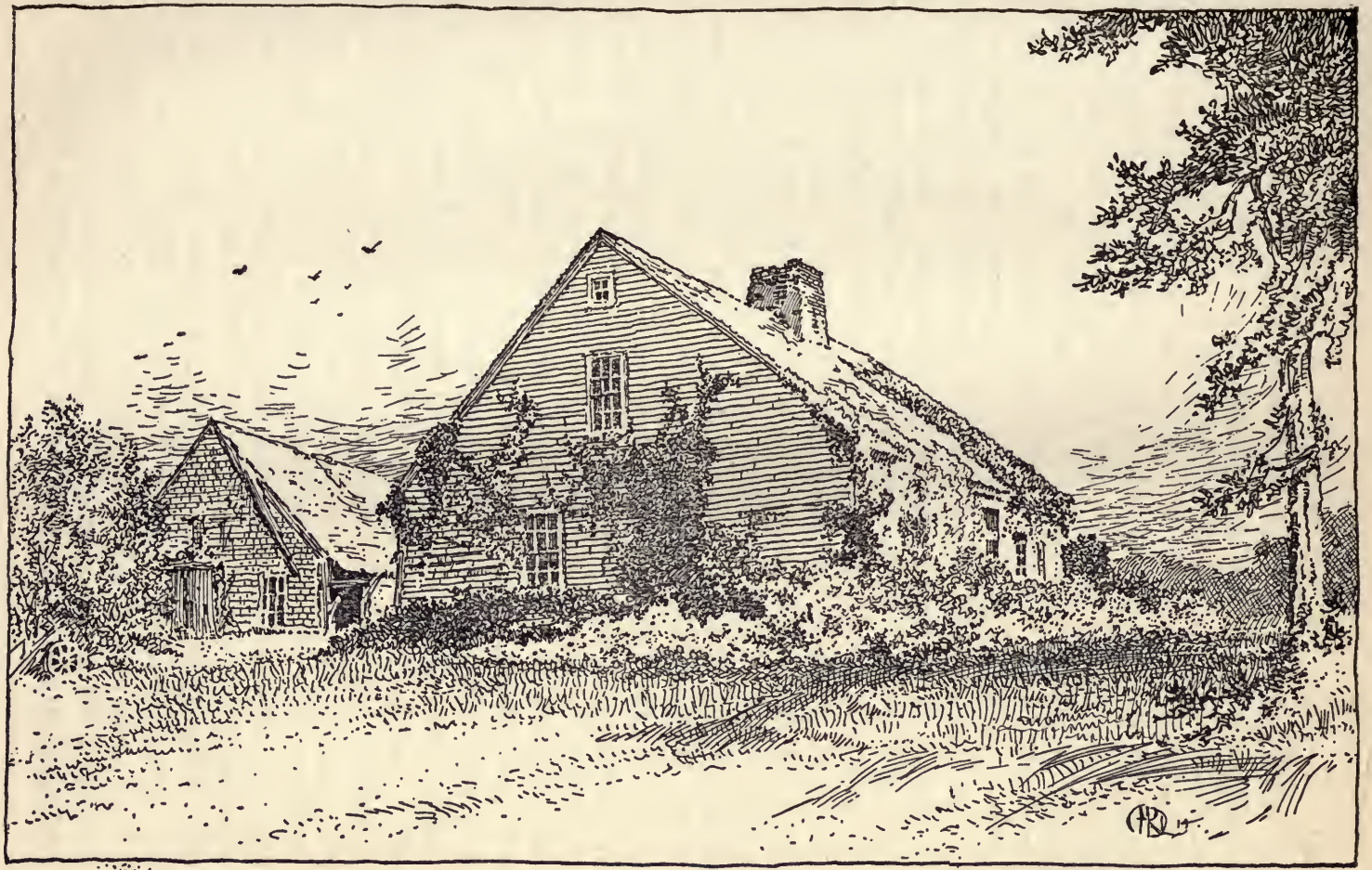
building arrangement to topography.) More frequently it is harmonious with the landscape in texture and color: the gray green of its painted woodwork may harmonize with the color of the surrounding foliage; the texture and tone of its stonework, taken from a local quarry, may match the outcrop of the same stone appearing near it; its thatched roof and lichen-covered walls may be quite similar to the tree-trunks behind it and to the dead grasses before its door. Then too a building may be effectively harmonized with the landscape, or at least prevented from appearing incongruous with it, by being very largely screened from sight by mantling vines and surrounding or overhanging trees. (See Drawing XXVI, opp. p. 198.)

We should bear in mind, however, in our endeavors to subordinate a building to a natural or naturalistic landscape, the fact that it is not essential for harmony that the shape of the building should resemble any natural form. (See Plate 35.) The building need not be rounded like a great tree, or jagged like a cliff, or irregular or flowing in outline like the surface of a mass of shrubbery; indeed an attempt to do any of these things, however successful it might be in subordinating the building to the rest of the scene, would inevitably, if carried to any length, result in architectural ugliness. The building should be beautiful, convenient, efficient after its own kind. In fact, fitness to local conditions, and simple form obviously expressing a practical need in construction or in use, tend of themselves to make the building less expressive of man's will, more expressive of man's necessity, and so less incongruous with natural expression.

A building usually assumes greater harmony with the landscape as it grows old, that is, as it is subjected for a longer and longer time to the natural forces of rain and wind and weather which are operating also on all the other objects of the scene. This is noticeably true, even with the old wooden New England farmhouse. (See Drawing XXIII, opposite.) In the case of a masonry structure, it is of course more marked. The ivy clad ruins of a castle may form quite as restful and integral a portion of the scene as would a natural cliff in the same place.

Buildings Dominating Landscape

If the scene of which the building is a part expresses primarily human ideals and is arranged obviously in relation to man's use, then



ABANDONED FARMHOUSE

Drawing by Hubert G. Ripley

the building almost certainly should be the dominant object in the composition. This effect is not difficult to attain, for to the ordinary person a building, like any of the other works of man, is in itself interesting. A building attracts interest also by its form, — definite, rectilinear, obvious, expressing the uses for which man designed it. Then, too, the definiteness of a building's texture and the crispness of its decoration attract the attention more than does the texture of natural trees and rocks; and in color, though to be sure the flowers may boast colors as bright, few natural objects present such considerable areas or simple schemes of unbroken color, and few indeed can vie with the colors of our modern American wooden houses, whether in the city or in the country. Where marble or limestone or any light-colored stone is used, the building becomes a very conspicuous object in contrast to the vegetation about it. And — an important consideration — a building of an architectural style in which the parts are all obviously related to one compositional whole, particularly if there is balance and repetition of parts, will be thereby especially unified, distinctive, and conspicuous in the landscape. (See Drawing XXV, opp. p. 196.)

In the immediate surroundings of buildings, the outdoor forms may be definitely subordinated to a dominant architectural conception by the creation of terraces, parterres, ramps, steps, by the formal inclosure of areas of ground, by the use of vines and shrubs and trees trimmed and clipped as objects of architectural decoration. (See Drawing X, opp. p. 80.) Farther from the building, the trees may retain their natural forms, though still made a part of the same scheme as the building by being arranged in man-made compositions. The roads and paths, perhaps formal, perhaps yielding their formality unwillingly to topographic necessities, in any case express man's use of the ground, and point to the building as the center of the scheme. Of course there is a limit in any man-made scheme beyond which man does not endeavor to make the whole of the landscape express his will. In the Italian villas, there is usually a definite wall which marks this limit. In many English estates and modern American parks and large country places, there is a transition rather than a demarcation between man's and nature's domain. Whatever may be the treatment of the immediate surroundings of the buildings, however, the buildings

may dominate a much larger landscape by being so placed, usually on a height, that the views from them sweep the whole surrounding country and that they themselves form the most important object in the views to be obtained from anywhere in their vicinity. It was partly the endeavor to assert this dominance over a large sweep of landscape in the flat country of France and parts of England which brought about the schemes of long allées and vistas like those at Fontainebleau, Versailles, and Hampton Court. (See Drawing IX, opp. p. 78.)

Form Relations of Buildings and Landscape Surroundings

It goes without saying that a building as a unit in landscape must bear a proper compositional relation in form and color and texture to the other objects in the same scene.* We have already observed how in a formal composition the other objects, even though they be such things as trees, may be given formal shapes, or at least arranged in a formal way. More commonly, the other objects in the scene will be trees, hills, and so on, fundamentally different in form and particularly in texture from the building. Pleasant form composition is however no less possible in such a scene. To some extent the form of the building, even though it be the dominant form in the scene, — indeed particularly in such a case, — may be chosen to harmonize with the landscape composition. The form of a building crowning a broken and aspiring hill may well be in itself, within architectural limits, irregular and aspiring, and its upper part more so than its base, marking, as it were, a culmination and concentration of the character of the whole hill in its crowning architectural object. Perhaps the best known example of this composition is Mont St. Michel. Similarly, for the sake of harmony, a building in a great plain might be of a low simple spreading form in which horizontal lines were dominant. It is emphatically true, however, that harmony of this kind may be obtained at too great sacrifice of other considerations. The low horizontal-lined building on an aspiring hilltop for the sake of form contrast would probably be a failure compositionally, but a tall tower dominating a plain, either alone or, perhaps better, rising from a crouching, horizontal-lined mass of buildings, would probably be a better thing in the whole composition of the plain landscape than would the low buildings without some such relieving feature : for example, the long low line of

* Cf. Planting in Relation to Architectural Structures, Chapter IX, p. 186.



Drawing by Hubert G. Ripley

ENGLISH HILLSIDE FARM BUILDINGS

Padua with its uprising towers. Where the building stands on only a slight eminence, the composition may demand that the ground be modeled as a base for the building; that is, that it shall offer the building an apparently sufficient pedestal on which to stand, and that its outline shall lead the eye from the surrounding ground surface in and up to the vertical sides of the building. This may be done in different ways according to circumstances, for instance, in some compositions by an informal knoll, in others by a formal terrace.

In a landscape composition, the form of the building must be considered not only in relation to the form of the ground on which it stands, but in its relation as an object to other objects in the same scene, hills or trees or whatever these other objects may be. Some thought might well be given to the form of the distant hills by the designer who is determining the form of a building, but this would be a somewhat subtle consideration almost surely overborne by other more important relations. The form relation of the trees which surround a building to the building itself is however a matter of great importance in landscape design. This we have discussed in the preceding chapter.*

The examples of the relations of building to landscape which we have considered are obvious ones which are capable of some statement in words. There are an infinite number of compositional relations existing between the various forms and styles of architectural structures and the various undulations and complicated modelings of ground surface and the multitudinous shapes of vegetation. The choice of the form relation in almost all of these cases can only be a matter of trained feeling applied to the individual problem.

When buildings are considered simply as objects taking their part with other objects in landscape compositions, their outline or silhouette, their main mass, must be studied first, and next the relation of their main constituent masses, of wings to central mass, pavilions to connecting walls, roofs to walls, window and door openings to wall-space. This the landscape architect should have a feeling for, — thus far he should not only comprehend the architect's motives but be able to suggest changes, from his greater knowledge of the effect of

* Pages 186–187.

the setting. This knowledge of form will be an abstract one, not based on knowledge of architectural detail and material, and therefore limited, when applied to architectural forms, and subject to practical correction by the architect's greater knowledge of what can be built and how the economic and esthetic ends of the building itself should be served.

Building Groups

These same general considerations apply to the design of groups of buildings in their relation to the landscape, but since the separation of the units makes the whole scheme more flexible, it is possible to adapt the form of a group of buildings to its surroundings more completely than can be done with the form of a single building. The esthetic conception of the whole group may be absolutely formal, — a formal harmony of size, shape, position, and orientation of the buildings. If this conception is chosen for a scheme, the buildings must be large enough and close enough together, and in general their formal relation strong enough, to leave no doubt of its dominance. Formally-related college buildings surrounding a large and irregular open space, large formal designs for civic centers carried out in diminutive buildings, can be found as examples of ineffective design of this sort. In other cases, the relation of the buildings in a group to each other and to the landscape may be one of mass and texture and color harmony rather than one of axial relation and orientation. In such groups the shapes of the buildings themselves are likely to be more irregular, and the influence of the topography more directly recognized. Trees and other vegetation may play a part less subordinate to the architecture than they do in a more formal design. If the effect of a group is desired, however, the relations of size and position of buildings are to be studied no less than in a symmetrically balanced scheme. This matter of building grouping is one in which the landscape architect may well have a hand, but, at the scale at which this book is written, it can hardly be treated in more detail here.*

Texture Relations of Buildings and Landscape Surroundings

The texture and the color of the surface of buildings are often determined by the choice of material of construction; and the necessary relation of texture to form, and of form to architectural style and use, will in many cases make the choice of material and texture the un-

* See articles by A. M. Githens: *The Group-Plan*, in the *Brickbuilder*, July, Sept. 1906, Sept., Oct., Dec., 1907, Oct., Nov., Dec., 1912, Jan., Feb., 1913, v. 15, 16, 21, 22.

avoidable result of the choice of style or of the recognition of use by form. In masonry the available stone and the way in which it can best be laid may determine the texture produced. As objects in landscape design, architectural structures are considerably dependent upon their texture for their compositional effect in conjunction with other objects. Smoothness of texture, and consequent possibility of definite pattern in small detail, enables an object most completely to express a man-imposed style, and so to differentiate itself from the landscape; whereas a rough texture, that is, a certain fortuitous arrangement of the smaller parts of the surface, makes a structure more nearly similar to the trees and rocks of a natural landscape. Particularly in the smaller structures, the designer should be on his guard as to this definiteness and perhaps stiffness of form produced by fine texture. A fountain, a sundial, the curb of a fountain basin, any such object which must have definite form in small size, may well be made of some smooth-textured material; on the other hand, many mistakes are made in the choice of a texture too fine, and so of too rigid a surface and too definite an outline, for things like steps and walks and walls which are not designed to be themselves the dominant objects in the scene, but which are to form part of an outdoor composition with trees and flowers. Such structures should have some pleasing irregularity of form and color in their surface and some possibility of accumulating moss and lichens, and growing old gracefully with the rest of the design.

Color of Buildings in Relation to Landscape

The choice of local material in stonework may give harmony of color, as well as harmony of texture, between the stonework and any natural ledge which may appear in the composition. For the most part, however, the color of our structures is determined by our choice of brick, by our choice of a stain for cement and stucco, and by our choice of color in paint. Fortunately for the American landscape, the colors which are usual in brick and stucco and cement are on the whole the more subdued colors. No such restriction, however, is set upon house-painters, and, although the worst period of incongruity of violent color between each house and its neighbor and every house and the landscape is now passing, there are still sins enough of this kind committed to make it desirable that every landscape designer should bear his witness against them. In the color which can be so readily

obtained from paint, the designer has actually a very powerful means of unifying his design, of concealing defects, of accenting excellences. Every architect knows that, in a wooden house, good forms in his building mass, good arrangements in fenestration, may be emphasized by appropriate painting, and that to some extent unfortunate arrangements forced upon him by the use of the building may be rendered less noticeable in the same way. As an object in the landscape, a large and ugly but unimportant building may be subdued by being painted to match its background; a small building, intended to serve as a point of interest but hardly large enough for its task, may be painted white. A group of buildings may be unified and shown to belong to the same scheme, to the same owner, by being painted with the same colors. The repetition of the main architectural mass of the house by outlying buildings in the scheme may be in this way very successfully enhanced. Under the blazing sun of California or Florida, these colors may be brilliant as they often are in Spain and in Italy; under the grayer sky of New England, cream white, or gray white, or gray, or brown, or gray green, would be colors in paint likely to be more congruous with the rest of the scene, but even there a tile roof of a fairly brilliant red may make a pleasant spot in the landscape.

The smaller architectural structures, being, more commonly than the larger buildings, subordinate objects in the landscape, come more completely in the field of the landscape architect. Their essence and individuality are usually architectural, however, and this should be considered even if the structure is made solely for its effect in a landscape design. The structures which we discuss as examples are only a few out of many, and the considerations brought up are merely some of the broad relations of such structures considered as units in landscape composition.*

Shelters and Pavilions

Besides the larger architectural structures which are commonly made primarily for some economic use, and smaller buildings for service purposes only, there are a number of lesser structures built primarily for enjoyment, such as pavilions, shelters, gazebos, pergolas.

These structures may have certain specific functions of pleasurable

* Cf. also discussions of structures in the garden, the estate, and in landscape parks, in Chapter XI.



Drawing by A. B. LeBoutillier

THE TEMPLE OF LOVE, VERSAILLES XXV

use in the design. Some may dominate a view and offer a protected and shaded place from which the view may be enjoyed. Such shelters were called gazebos in the Dutch and English gardens. Some shelters may be so arranged that it would be convenient to serve tea or other refreshment in them. This is likely to be an incidental function on a private place, but in public parks structures are often built primarily for this purpose. Some structures offer a shaded passageway from one part of the design to another. This is more particularly the function of the pergola, although in our modern parlance almost any structure that has an open vine-clad roof goes by this name. Some structures may be built to protect or shelter a small object of importance. We build shelters, for instance, over springs, or memorials of some historic event, or as protection for some piece of sculpture. In our private estates, and very commonly as well in parks, the ostensible fitting of a structure to any of these uses is often merely a method of giving it an apparent function and so making it seem more necessary and therefore more desirable and important in the design. In many cases, however, the primary reason for the building of one of these structures is that the designer feels the esthetic need of an architectural object in that particular place in the composition. It may repeat the architectural effect of the main building and so mark the limit of the defined or formalized portion of the scheme; for instance, a shelter may terminate a vista or allée cut through woods; it may lie on the farther side of an informal open space, but, being on the continuation of the main axis of the building, it may make more apparent the axial relation of the open space to the main structure. (See Drawing XXXI, opp. p. 268.) Frequently these structures may be connected with the walls of a garden or other inclosed area, either marking an important point, usually an axial point, in this wall, or perhaps giving solidity to a corner. In larger schemes, the pleasure structure may dominate its own subordinate portion of the design, standing for instance at the intersection of two allées in a bosquet, or in a naturalistic park dominating its own little glade in the woods. Fundamentally these structures are serving three purposes: they mark out and strengthen the man-made scheme, — of which, in a private estate, the house is the focus; they unify the scheme by repetition of the effect of the dominant architectural

mass; and they may serve as they are fitted to serve — being architectural and so necessarily interesting objects — as dominant units in their own subordinate compositions. (See Drawing XXV, opp. p. 196.)

Where some actual or apparent use of the pleasure structure is the first consideration — shelter or shade, for instance — and where no considerable architectural effect is desired, as often in a naturalistic design, the shelter may be made very much a part of its wilder surroundings. (See Drawing XXVI, opposite.) The roof may be thatched, the supporting posts left rough, or even with the bark on; the whole structure may be covered and concealed with vines. A greater departure from architectural form is permissible in such shelters, because they have an unimportant and somewhat temporary look, and a lightness of imaginative touch is not out of place in their design; to some extent this is true too of more architectural forms. Many of the latticework shelters of the French gardens are frankly stage scenery or at any rate flights of irresponsible fancy, and, in their place, they are for that very reason a needed factor in the formal design as a whole.

Terraces

In his articulation of the area-units of a formal scheme, the terrace offers to the landscape designer opportunities of arrangement provided by no other form. It is in itself a definite and segregated unit, but it is segregated without being entirely inclosed. Its retaining wall or bank is a boundary between it and the adjacent area, but from its greater elevation the terrace commands a view over at least the adjacent area and perhaps much farther afield. A terrace is in its effect an architectural object of simple shape, and is particularly fitted to serve as a base to structures of still greater architectural interest. Accordingly a terrace often serves as a base for a building, and as an outdoor area dominating a view. It should normally have a definite boundary on all sides. If the terrace runs completely around a building, or, what is much more commonly the case and more usually desirable, if it stops against a projecting wing or wall, it is thus given completeness of form. The proportions of a terrace on which a building stands will usually be determined by the three functions which we have mentioned. Its surface will be proportioned to the mass of the building, and to such uses as are actually made of it, as parterre, or tea-terrace, or whatever else. Its width will further be fixed by how



Drawing by Henry P. White

THATCHED SHELTER

its outer line relates to the view beyond, not concealing too much or intruding a too formal foreground. Its height above the surface below will be motived by the relations of its bank or retaining wall — perhaps with its steps or niches or other decorations as the case may be — to the composition offered in a view towards the building, by its proportions for itself, and by its relation as a base to the building. A series of terraces running down a hillside should have adequate termination, both at the ends of each separate terrace and at the bottom of the scheme. The relative shapes of such terraces should be carefully studied so that their successive surfaces may be seen in pleasant proportion from above and their successive walls may surmount one another in pleasant relation as seen from below, and culminate effectively in the dominating structure. For these purposes an ideal arrangement of terraces would be one in which the upper terrace next the building was narrow and high, and the height of the successive terraces decreased and their width increased to the terrace at the foot of the series, which might be broad and low. In formal arrangements of the ground like those in a formal garden, importance may be given to one part of an area by arranging it as a terrace, as for instance where one end of a garden is so treated and a banqueting house or shelter built on such an elevation. Or the concavity of the whole form of a garden may be accented by a slight terrace running all the way around it.

Parapets

Since people will, if it is possible, invariably come to the very edge of any elevation on which they stand to enjoy a view, there should usually be a path along the outer edge of the terrace, and, if the fall be at all considerable, a parapet of some kind on which the visitor may lean. If the design requires it, this parapet need be no more than knee high, but it will still be effective if it be broad enough. At the head of the curving flight of steps above the *tapis vert* at Versailles, where a parapet would have been undesirable on account of the view towards the chateau, the safety of spectators is practically assured by an evergreen hedge planted on the lower level, with its broad top, trimmed flat, reaching to the upper level. A terrace parapet can hardly exceed a height comfortable to rest the elbows on without seeming out of scale with the size of a man. The question of the construction of the parapet — balustrade, pierced wall, post and panel, or whatever else of all the

possible alternatives may be chosen — is one of architectural detail which we cannot cover here.

Retaining Walls

The most definite and architectural form of terrace is produced by a retaining wall crowned with a properly proportioned balustrade and perhaps paneled with piers or buttresses. Especially where this wall is not very high, the proportion between the wall and the parapet becomes a matter of great importance. If these proportions, as they are forced upon the designer by the normal height of a balustrade and the necessary difference in elevation of the ground, are not satisfactory, they may be improved to some extent by a judicious choice of the height of the base-course for the wall or of the crowning course on which the base of the parapet is set. If no solid parapet and no stone balustrade can be arranged in good proportion, it may still be possible to construct a light iron grille-work which will serve all purposes of safety without assuming importance in the design of the wall, and without intruding on the view from the terrace itself.

Where there is a possibility that a long straight run of terrace wall may prove monotonous, it may be broken by projections which offer particularly good viewpoints and which serve some subordinate purpose of their own as objects in the design. The face of a terrace wall is almost always broken by steps at some place, and indeed the case seldom arises where the designer cannot obtain sufficient variety of shape in a terrace by recognizing local requirements, and this without appearing to have willfully distorted the shape of the structure. A terrace wall is an ideal backing and protection for herbaceous planting, as can be seen in many examples of the English borders.

Terrace Banks

Where, for reasons of economy or design, it is undesirable to support a terrace by a vertical retaining wall, a sloping bank may be used with its surface held in place by turf or possibly by other planting. If the terrace is to retain its architectural character, some fine-textured covering material like turf will be essential, in order that the surfaces and lines of the bank may remain sufficiently defined. From the practical point of view, the slope will be determined by the angle of repose of the material and by the possibility of cutting the grass: a slope steeper than forty-five degrees is likely to be hard to maintain.*

* Cf. Natural banks, Chapter VIII, p. 148.

From the point of view of appearance, the big general mass relations of the scheme will have the preponderant influence, but an important minor consideration is the parallelism between the surface of the bank and any flight of steps which may lie upon it. This would give the bank a slope of about one on two. The turf terrace bank has perhaps its best use where different levels are to be individually defined, but still very definitely recognized as parts of one larger open area. Planting at the top of such slopes may be desirable and can be effective; even architectural balustrading at such a place is occasionally good. Planting directly at the bottom of these slopes is, however, extremely hard to manage: the slope itself, as we have seen, cannot readily be planted, and if it be kept in turf, it makes an open space behind planting at its foot which is likely to make this planting appear as if it had insufficient background.

Steps

Steps leading from one level to another in a landscape design are, like gateways, objects which have or seem to have an economic use, and so a certain feeling of inevitableness in the scheme, but which are also extremely desirable objects in the esthetic design. They diversify and enrich the walls or banks of terraces; they lie naturally as terminal objects and vista points to walk towards, and centers of pictorial compositions to look at. From the necessary relation of the riser and tread of their steps* and the relation of the height of their balustrades to the height of a man, they introduce an element of human scale into the composition and a pleasant suggestion of human use.

Steps in Formal Design

Flights of steps are often more effective when supported by larger objects. They may run down by the side of a projecting building or retaining wall, agreeably filling in and softening what might be otherwise a harsh angle. They may, however, themselves assume dominant importance in a view, forming architectural objects of almost any degree of interest and complication. When steps are treated as important objects in this way, two interrelated considerations are likely to be paramount: their architectural form and the directions of traffic and views to and from them. Where the line of traffic and view is continued unchanged beyond the steps in each direction, or

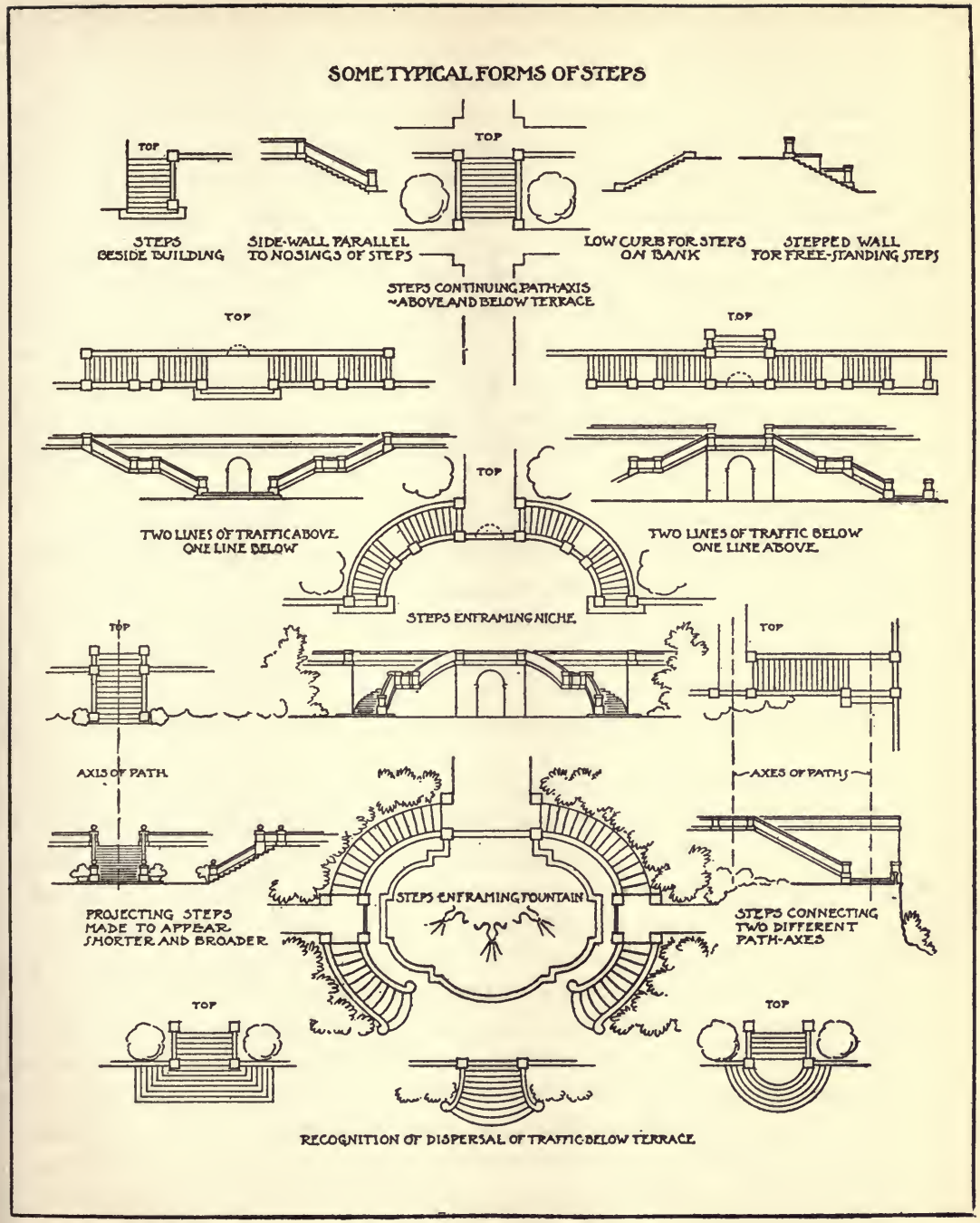
* See article by F. L. Olmsted, Jr., *Notes upon the Sizes of Steps required for Comfort*, with diagram, in *Landscape Architecture*, Jan. 1911, and further Jan. 1928.

where the traffic is turned abruptly at the foot of the steps, or the traffic and the view stop short or turn abruptly at the top, a single straight flight of steps will probably be constructed. There will be a tendency to make the width of the flight of steps equal to the width of the path which approaches them, but considerations of the total mass of the flight as an object in the design will enter here, and if it be not very high, it may for this reason be made wider. Or the mass may be considerably increased by posts, balustrades, ramps, or projecting bases for flower pots at the sides of the steps. If the steps lie in a turf bank, it is usually desirable to have the line of the nosings of the steps lie in the plane of the bank or at least be parallel to it. Balustrades on such steps are not practically necessary and are usually not esthetically desirable. A low ramp paralleling the slope of the bank, or perhaps a stepped ramp is more likely to be congruous with the shape of the bank.

Where a single flight of steps leads to an open panel below or to walks that go in several directions, the steps, or at least the lower part of the steps, may well recognize this dispersion of traffic by a rounded or splaying form. Such a form has an obvious esthetic advantage in design, since the broader lower steps give a pleasing base to the whole flight and lead the eye agreeably from the rising line to the horizontal surface below; but nevertheless such forms should be used only with great care unless the lower area to which the steps lead has considerable openness and expanse to right and left of the steps.

One line of traffic below may be spread into two lines above by balanced flights of steps rising to right and left. Such an arrangement almost necessitates something — niche, fountain, or similar feature — in the wall between the steps at the lower level, terminating the single lower path and enframed by the balanced flights of steps. This arrangement is usually best when it is sunk into the face of the retaining wall, rather than when the landings at the tops of the two flights of steps form projecting bastions.

Two lines of traffic below may be collected into one line above often by two balanced flights of steps applied as it were to the outside of the retaining wall and projecting above in a bastion for the top landing, or by two flights of steps, usually curving, sunk into the body of



DRAWING XXVII

the terrace and enframing a fountain or pool at the lower level. In the case of the re-entrant steps, the portion of the retaining wall inclosed by them would almost certainly be decorated by niche or fountain or statue. And the wall which supports the landing at the head of the projecting steps may be given additional interest in a similar way. The upper landing, particularly when it projects, is likely to be a point commanding a view. The fact that there is usually a view down the whole axis makes it often desirable to depress this upper landing, so that its outer balustrade may not interrupt the view more than is necessary. It is also possible, as in the case of the Dragon Fountain at the Villa d' Este, for a single axial path to come to a fountain feature backed by a retaining wall and, going around it by symmetrical enframing flights of steps, proceed above still as a single axial path.

A path at one level may be, for purposes of design, carried on at another level with its direction parallel but not continuous. A single flight of steps running parallel to the face of the retaining wall may satisfactorily make the bayonet joint between the two paths. Such an arrangement however is hard to manage if the axial relation of the lower path is important; it is more readily done where the lower path lies on the outside of a terrace or for other reasons does not have to be axially treated.

There are of course endless other possibilities in the design of steps as architectural objects; this discussion is intended to point out only some of the most obvious examples. (See Drawing XXVII, opp. p. 202.)

Steps in Naturalistic Design

In informal and naturalistic landscapes, the design of steps will be more obviously motived by their use, though they are still important in the esthetic composition. They should usually seem to be fitted to the topography with as little disturbance and difficulty as possible; they should almost always be sunk into the bank rather than protruding from it, and they should very rarely lie unsupported on an open bank, but rather should be enframed with shrubs, overarched with trees, or should run along the side of a projecting ledge. Flights of steps are bound to be conspicuous objects on an informal path; they should therefore be seized upon to be made interesting incidents, — they should, that is, be enframed, supported, made a part of a harmonious composi-

tion with their surroundings. Whether the flight of steps shall appear as an architectural object, dominant in its own small composition, or whether the steps shall be as little obviously man-made as possible consistently with their use as steps, will be a question decided by the degree of approximation to natural effect which the designer considers to be necessary in a particular case.

Where the steps must be, for their proper use, obviously man-made masonry, they would best be good masonry. It is a mistake, in a structure which is plainly a flight of steps, for the sake of an unattainable "naturalness" to make the risers and treads of different sizes on different steps and to make the surface of the steps dangerously rough. Good, practical steps may still be well related to a natural landscape by their color, by their texture, by pleasant harmony of form, and by being enframed and decorated by foliage. (See Plate 34.)

Walls and Fences

Besides their obvious economic uses, walls and fences are in a sense one indispensable esthetic element in formal landscape design, as boundary plantations are in informal and naturalistic landscape.* They segregate unit from unit; they mark the articulation of the scheme into separate functional areas, without which there can be no effective design.

The height of a free-standing wall or a fence will be determined first by the amount of interruption to the view which it is designed to create. If it is desired that the view shall be in effect confined to the area inclosed, then the wall or fence should be somewhat higher than the eye.† It is worth noting that a formal screen only just as high as the eye is likely to be an annoyance, since it neither conceals nor reveals what is behind it. If the intention is to define an area, but to allow the view to pass over outside areas as well, then a wall or fence considerably lower than the eye may be the most desirable structure to use. Another esthetic consideration tending to determine the height of a wall or fence is its proportion as an object in composition. A very low wall is likely to look better than a very low fence, since the thickness of the wall still gives it sufficient mass, whereas the low fence is apt to look dwarfed and out of scale with the rest of the design. A wall surrounding a very large area often must be tall merely as a

* Cf. Chapter IX, p. 167. † Cf. Chapter VII, p. 128.

matter of scale relation. A lattice fence springing from the side of a large house would probably be tall, for some distance at least, for the same reason. Sometimes it is desirable to design walls and fences so that though they give sufficient inclosure, they are not in themselves conspicuous, being clothed with planting or perhaps even themselves built with irregular forms which differentiate them as little as possible from natural objects behind them, and enable them to serve as an inconspicuous background for interesting objects which they inclose. More frequently, walls and fences, when parts of a formal scheme, should be treated as architectural objects, which they are essentially. Their top should be horizontal in effect, although it may be enriched by the repeated subordinate breaks in outline of post and panel; and if it is necessary to have this top line at different elevations at different places in its length, the break from one level to another should be made in a proper architectural manner.

Walls: Materials and Decoration

Some kind of coping is almost always desirable for a wall, both for the consideration of protecting the masonry from water and for the esthetic consideration of giving the wall a crowning member and recognizing the important horizontal line of its top. Similarly, a projection of the masonry at the bottom will give the wall greater apparent stability, and, properly proportioned, will form the lower of the three normal architectural elements for such structures: — base, wall-surface, cap. If there is danger of too great uninterrupted expanse of wall-surface, this may be broken up by piers or buttresses.

In texture, the material available in masonry gives almost endless opportunity of variety and beauty. Where the effect justifies the expense, the wall may have all the beauty of smoothly dressed stone, and of justly-proportioned and finely wrought moldings, and even decorative carving. Similar results may be obtained at less expense in cement concrete: simpler forms not requiring sharpness and accuracy of edge may be obtained by casting the concrete in a mold and improving the surface texture after the mold is removed by scrubbing or dissolving away some of the finer material and allowing some of the particles of the aggregate to show as a granular surface. If material for the aggregate be chosen of the same hardness as that of the cement, it is possible to improve greatly the definition of the cast

forms by subsequent chisel-work. In many cases the crispness of form so obtained is sufficient for the purpose which the wall serves in the design, but it has not yet proved commercially possible to produce more cheaply in this way as delicate results as may be done in cut stone. Somewhat the effect of a concrete wall may be produced even more cheaply by the use of cement stucco on expanded metal lath or some other similar material attached to wooden supports or perhaps to supports of structural steel. Such an arrangement has the advantage of lightness, cheapness, and rapidity of construction, but is not in any other respect as desirable as cement or stone. These architectural and sculptural forms may be obtained also, more cheaply than in cut stone, in brick and in terra-cotta, with the addition of the natural texture of the material and of the texture given to the whole work by the mortar joints between the separate blocks. Where the whole texture of the design is still larger and looser, or where the wall is intended to call less attention to itself, the surface decoration of the wall may be the more fortuitous one of good brickwork or good rough stonework, in which there are as many possibilities as there are different available materials and effective methods of brick-laying and stone-laying. The designer should remember, however, that where the wall is being treated as a structure, it should be built structurally: it should not, on the one hand, for the sake of surface decoration, sacrifice the apparent strength of base and wall and cap to decorative designs in brick or tile, nor, on the other hand, for the sake of interest in texture and decoration by planting, degenerate from a good job of masonry into a stone-pile.

Where the definite form of the wall is not to be insisted on, or sometimes in the panels between the piers of an architectural wall, the texture of vegetation may be substituted for that of stonework by the growth of vines hanging from above, espalier trees fastened to the surface, or closely clinging vines growing from the bottom and entirely concealing the wall. Still more diversity and interest may be given to walls of these general characters by arranging, during their construction, pockets filled with loam which may be properly watered and in which rock-loving flowering plants may be set out, decorating the wall-surface with masses of bloom. Such an arrangement among

structures finds a very close relative in the rock garden of naturalistic design* and indeed in many interesting examples one merges into the other by almost imperceptible degrees. Even in this case, however, the general rule is likely to hold that it is better to have the work either recognizably a structure or recognizably an attempted suggestion of natural beauty.

Some walls are built — on New England farm land, for instance — from the stones obtained by clearing the land, primarily to separate one field from another and with no thought of appearance except as a workmanlike job. When they have been toned by the weather and overgrown with bushes and vines, they blend so thoroughly with the landscape that we come to look upon them almost as parts of the free landscape rather than as architectural structures. (See Plate 9.)† A similar effect of "naturalness" is produced by the New England post-and-rail fence and by the "snake" fence of Virginia.

Fences, Lattices, and Grilles

A fence may be, like a wall, a solid screen of any height that the designer chooses. Fences built of vertical boards fastened close together to horizontal stringers which are upheld by vertical posts are those most commonly used in this way. In their large relations, they are subject to many of the same considerations as are walls, and they may be treated with a cap and base molding like a wall; but on account of the method of their construction it is often better to recognize the posts and panels by some variation in the top line, by some difference in the construction and spacing of the boarding, and to depend for further interest of texture on the repeated vertical lines of boards and interstices. More commonly, the construction of a fence is such that, although it serves as a definite boundary, still the view passes through it. Sometimes it is desirable that the area on the other side should be thus seen or guessed at through the substance of the fence. More often a planting immediately behind the fence furnishes the solidity which the fence lacks. In either case the effect of the fence itself will be largely dependent upon the pattern which it makes against the distance or the background of planting.

Growing from the reasonable and ordinary mode of constructing

* Cf. Chapter VIII, p. 143.

† Cf. Chapter V, New England Bushy Pasture character, p. 68.

a wooden fence with posts and stringers and pickets, we have an endless variety of fences of open palings, different in their size and scale and the spacing of their parts according to the design of which they form an element, alike only in that they consist of a series of vertical palings, grouped into panels between the sturdier and supporting posts. Based on essentially the same method of construction, we have many varieties of lattice fence, usually higher fences, particularly those used for screens, with or without vines. Here the panels between the posts are filled with a grille-work of wooden strips — vertical and horizontal, diagonal, or forming some more complicated pattern — which owe their strength to being fastened together at their intersections. Properly constructed and painted, such lattice work, though lighter, is about as strong and durable as any other wooden fence of the same height. In its simpler forms, it has the advantage of offering a consistent but interesting texture over a considerable area. If the lattice-work is fine, a mesh of four inches or so, it serves practically as an impenetrable screen when seen from any distance. It makes an excellent trellis for vines, and when designed to be so used can be constructed of a much larger mesh, the solid screen being finally furnished by the foliage of the vine.

For their preservation wooden fences are usually painted or stained. The wide range of color so offered to the designer gives him considerable power to modify the effect of the fence in his design. He may make it blend almost absolutely with the foliage background by painting it green; he may make it very important in the design by painting it white. He may accent the unity of the various architectural structures by painting buildings and fences with the same scheme of color.

For more permanent and important fences, the posts may be of brick or stone, perhaps set on a curb or connected by a low wall, and the panels may be of wooden or iron grille. The iron grille-work, like the wooden picket, may consist of a series of vertical members held together by horizontal stringers, or exceptionally of a lattice of interwoven or superposed iron strap-work; but more commonly the malleability of the iron leads the designer to employ curved forms and interlacing patterns of all degrees of intricacy, from a simple series of circles between vertical iron pickets to the elaborate floreated designs

of Jean Lamour of Nancy. The wooden grille-work, naturally more massive than the iron on account of the weakness of its material, is almost always painted, and as it can be painted a light color, it can be cleanly revealed against a background of nearby planting. The ironwork, on the other hand, is dark in color and can seldom with propriety be painted a light hue. Ironwork, therefore, to be well seen, must be revealed against a lighter background, either against distant objects or against the sky, and this fact must be remembered in designing the ironwork. A design which seems to have ample weight when shown on the drafting-board will often appear pitifully weak when seen upheld against the dazzling background of the sky. The designer should note also that wrought ironwork is fitted to give the beauty of curve, of intricate interlacing, but not to give the solidity of mass. It is emphatically in its place, then, where it fills a panel in a fence or an opening in a gate, but if it is to be used in itself as a post or as an arch, it must be heavy in form if it is not to run the risk of appearing flimsy and insufficient.

Gateways and Gates

The landscape designer finds gateways among the most important of the smaller objects with which he deals in his compositions. (See Drawing XIII, opp. p. 100, and Tailpiece on p. 23.) They mark a point of passage from one unit of the scheme to another: they are objects to which people go, and they are inevitably focal points of attention in a number of different views. In formal design, they are the terminal points for the vistas created by the paths which run towards them and they are points of importance and interest in the walls or fences in which they are set. The size of their openings will first of all be proportioned to the amount and size of traffic which they are designed to accommodate: a gate on a small footpath may be three feet wide, a carriage gate ten feet wide or more. The size of the whole structure will be proportioned to its importance in the design: the main carriage entrance to an estate may be an imposing feature, while the service entrance will probably be inconspicuous. The gate at the end of the main axis of the lower garden at the Villa Lante is a considerable structure although it probably was never frequently used as a means of access. The size of a gateway should bear some relation to the height of the barrier in which it is set. Purely from the point of view of com-

position there must exist a more or less definite relation between the opening and the arch or lintel over it, if there be one, and the height of the adjoining wall. From the point of view of obvious fitness to use, it is evident that a massive gate and gateway is unsuitable in a barrier so low that it might appear to be easier to go over the barrier than through the gate. Also a solid gate is seldom desirable in an open-work fence. A gateway for foot traffic is given much additional dignity if it may stand at the head of a flight of steps. A gateway standing at the foot of a flight of steps, however effective it may be as seen from the lower level, is almost certainly ineffective as seen from above, since its lower portion is cut off by the ground.

The gate which closes a gateway may be of solid boarding, completely cutting off the view, or of wooden or iron grille. The open grille is often more desirable in a gate, even when it is not so in the contiguous fence, because a gate necessarily suggests the presence of another area beyond, and so, unless this area is in some way unpleasant, a glimpse into it through the opening rather enhances the effect of the gateway.*

Statuary

The landscape architect has at his command many minor objects of interest which he may use, each in its place, to mark the minor centers of attraction which he creates in his designs. In the realm of architectural and sculptural forms, he has the spheres or urns or pineapples or flames which may serve as the finials of the posts of his balustrade or fence, or as the crowning feature of the roof of his summer house. He has the sundials and gazing-globes that may mark the intersections of paths in his gardens; the vases which may mark the four corners of a grass-plot or formalize by their repeated definite shape the walls of an allée. Besides all these, and many others, he may call upon the complicated and more powerful interest of statuary. A statue has all the power of exciting interest possessed by an architectural form like the column or the vase through its beauty of proportion, and through the perfection of its workmanship and the care which its designer evidently lavished upon it. But beside all this, the statue has the added attraction of representing a living form in which every

* For further descriptions and photographs of gates and gateways see Jekyll and Weaver, Mawson, and so on. (See REFERENCES.)

man who sees it must feel some interest of kinship. Having this double interest, statuary is bound by a double restriction. It must be sufficiently natural and lifelike to suggest the living form and express the spirit of the being which it represents; it must at the same time submit itself to the rules of mass, of balance, of solidity and apparent permanence, — of the general proportion of any decorative object to its base and to its setting, — which govern its forms as they do the forms of the vases and sundials and the steps and buildings in man's designs. A statue representing a figure in an unbalanced attitude gives a feeling of unrest if one looks at it for long. For similar reasons, many persons object to a statue which, though balanced, represents violent exertion.

Value of Statuary among Decorative Objects in Design

Because of its greater fineness of workmanship, because it is usually a more important work of art, because it has, besides its form, such a wealth of attraction in association, a statue in landscape design usually takes the more important place among the minor decorative objects.* The general rules of its mass relations in landscape design are the same which govern the use of other minor decorative objects. It is interesting to note that statuary, on account of its added value through representation, is worthy to occupy the most important place as an object in the most formal designs, although it is not itself, in any restricted sense, formal; and so it may at the same time accent and relieve a rigidly architectural scheme.

The signification, the expression, the association, of statuary should also be studied if it is to play its part to the fullest degree. This goes without saying in the case of commemorative statues: one might expect to find the figure of a warrior or of Victory as a monument in a battle-field. Almost as surely should one expect that a statue in an orchard should be of Pomona or some of her mythologic kin; a statue in a grove, a dryad; a statue in a flower garden might well represent Flora or Vertumnus; and we are not surprised to see Peter Pan playing his pipes in Kensington Gardens. Such a statue of the genius of the place may express and give life and personality to the effect which the landscape architect is striving to produce by his whole design. But besides such obvious appropriateness as this of the statue to its sur-

* See discussion of statuary in the garden, Chapter XI, p. 245.

roundings, the designer must take into account a more general appropriateness of effect. Statues representing the Seasons, or Youth, or Love, or Joy, or Peace, might well find a congenial home in a garden. A statue of a falconer might be appropriately placed on the edge of a wood overlooking a park meadow; a statue of a tigress might be used in the wild scenery of a park which suggests the wilder scenery of the jungle.

Setting of Statuary in Landscape Composition

Where a statue represents something which might actually appear in its living shape in the same setting, it is extremely important that the statue should be treated as a representation, not as an imitation of the thing which it portrays. It should be plainly a statue, separate from its setting by being upon a pedestal, and probably so much the further removed from the realm of actuality by being of heroic size. Statuary may be perfectly in place in informal settings, but only certain statuary is so.* First, as we have before said, the effect and suggestion of the statue must be congruous with its location. Then its form, including the form of its pedestal, must not be too rigid and architectural; indeed as in the statues of Daudet and Thomas in the Parc Monceau, the pedestal may be an irregular mass of rock, perhaps covered or garlanded with vines and closely wrought into the surrounding ground and planting. Then, as the contrasts of color in the natural landscape are likely to be less violent than they are in man's landscape designs, the marble statue which might be none too distinctive a note on a formal parterre would be too staring white in a park. A statue of bronze, of lead, of gray or weathered stone, would probably be more harmonious in the naturalistic surroundings.

Some statues are sufficiently beautiful in all aspects to stand free and be looked at from all sides. Where such a statue is seen relieved against the sky, its relative size and bulk in the composition must be looked to, that it may not appear attenuated and insignificant. Many statues, however, are frankly designed to face one way only, and should therefore be provided with proper enframement and proper background. A niche in a trimmed hedge, a retaining wall and two sentinel cedars, and many other formal arrangements may serve for the statue closely

* See the illustrated article by H. A. Caparn, *Statuary in Informal Settings*, in *Landscape Architecture*, Oct. 1910. (See REFERENCES.)

inclosed in a formal design. In a naturalistic design this enframement may be provided by an informal planting, or it may be better that the statue stand free, relieved against a more distant background, but that the spectator be unable to view it except in its favorable aspect.

Architectural and Sculptural Water Features

In all the landscape architect's regulated and formalized designs, there is one element — water — over which he has no permanent control. He can determine the amount of its flow, he can determine the shape of its mirror in his formal basins, but in its curve of fall from one basin to another, in its noise of trickling and splashing, in its reflections and the sudden flurry of wind on its surface, it is as free in the formal garden as it is in the mountain brook. Under the sun of Italy or Spain or Persia or California, water and shade are the two precious things in a garden; and anywhere in the United States in summer, the cooling sight and sound of water, if it had no further qualification, would fit it for a most important place in the design.*

According to the amount of its flow, falling water varies in its effect from a little contented chattering trickle to a noble rush of water like that of the larger fall at the Villa d' Este. Where the situation allows it, an ample flow of water coming forth first at the upper portion of the scheme and then appearing in fountain and fall and cascade and pool in its progress throughout the design, is an ideal to be sought; but usually the supply of water is limited or the natural gradient is slight, and we must content ourselves with a small display of flowing water and use our ingenuity to make this as effective as possible.

Grottoes and Wall Fountains

Water may appear first in a scheme, with a certain suggestion of being a natural supply, if it comes out in a niche or perhaps in a grotto in a retaining wall. In the case of the grotto, the dominating idea would probably be that of coolness. A grotto is in any case expensive, however, and it is difficult to make such a construction containing a flow of water which shall not be dank and unpleasant rather than refreshingly cool. More readily, somewhat the same effect at a smaller scale might be obtained by having the water appear in a deep overshadowed niche, perhaps planted with ferns and other vegetation thriving in damp and shade. In some of the Italian examples where the

* For the use of water in its natural forms in landscape design, see Chapter VIII, p. 136.

water so appears in a niche, it falls from above upon a pile of rockwork intended to be disposed in a naturalistic way. If the rockwork is practically hidden by the splashing water, so that the effect is that of an architectural niche filled by a gleaming cascade, the result may well be good; if, however, the rockwork appears to any extent, the result is likely to be ugly, for the rockwork with only some trickling water is not a sufficiently definite object to be worthy of its enframement. It is usually better to have water issue from some definite and decorative object, from the mouth of a grotesque mask or from a dolphin, for instance. Of more elaborate wall fountains with architectural and sculptural adjuncts there is no end. In any thoroughly satisfactory arrangement of this kind, however, the splashing and sparkling of water is the center of interest, and the water itself is sufficient in volume to be adequate to its position. There are many elaborate and pretentious fountains which for lack of a sufficient water-supply are merely dampened in places by a trickling and slimy stream, sufficient to spoil the effect of the structure, but not sufficient to give any of the beauty of running water. A small supply of water, however, properly managed

Cascades

may give a very considerable effect. It can be arranged to fall from one basin into another in a clean but thin sheet without wasting any of its volume by running down over the surface of the stone, if the lip of the basin be properly undercut.* Similarly if the water flows in a cascade, or over sculptured irregularities in the course of a water-chute, the channel may be so designed as to throw the water into the air in a series of sharp leaps rather than to allow it to trickle around the obstructions with no spattering of drops to catch the sun.

Water-ramps

The water-ramp gives a noticeable effect from a moderate water-supply, where the stream flows in a channel hollowed out in the ramp beside a flight of steps. There may be a series of carved shells or other sculptural modelings of the channel throwing the water back and forth and making the most of its appearance and its sound. And each pier of the ramp may be crowned with a little basin and graced with a delicate toppling spurt of water, perhaps fed from the channel in the ramp, but more probably from a separate source which gives somewhat more pressure. Such ramps may be found at the Villa d' Este

* Cf. Chapter VIII, p. 142.

at Tivoli, at the Villa Farnese, at Caprarola, and at the Villa Lante, and in many other places, especially in Italy.

Free-standing Fountains

The free-standing fountain of superposed basins, often decorated with a statue, with the water proceeding from a central jet, or perhaps from a series of jets arranged about the lower basin, is the most ordinary fountain with which we are familiar. Its form is dominantly architectural or sculptural, and the water plays a subordinate part. If it is to be a fountain at all, however, it should be sufficiently supplied with water so that the rising and converging misty jets or the clean curving, falling film should bear a designated part in the designed form of the whole feature. There is no limit to the form of free-standing fountains except the limit to man's ingenuity. Turtles, dolphins, seahorses, Tritons, Nereids, any of the race of water-dwelling creatures, natural and mythological, may decorate a fountain basin or spout water across it. In the great basin at Wilhelmshöhe, there is a single magnificent shaft of water which rises some two hundred feet above the surface of the basin. A fountain in the Fountain Court at Hampton Court consists of a series of interwoven jets making a basket of crystal. A small fountain in a sequestered place might consist of a simple circular pool in the midst of which, on a block of stone, was set a great graceful blown-glass vase, like an Italian *fiasco*, constantly brimming with clear water and overflowing in a thin film clothing the outside of the glass and dripping into the pool; or in a similar situation, there might be, supported on a slender shaft eighteen inches or so above the surface of a little pool, a bronze water-lily on a leaf from under the edge of which, through an annular opening, a thin unbroken sheet of water would fall like a quivering hemispherical bubble into the pool below.

Pools and Basins

Besides using in design the life and dash and sparkle of running water, the landscape architect may also turn to his purposes the calm of the standing pool, with its interwoven reflections. A pool may be designed like a low flower bed or a grass panel, as a portion of the surface-treatment of a parterre or garden. Usually such a pool will be made a part of the foreground of some important object so that its power of reflection may be made the most of in duplicating and enhancing something of particular beauty. When a pool is so used, it should usually be designed to be brimming full of water, and generally its long di-

mension should run with the direction of the view towards the object which it reflects, so as to provide as large a mirror surface as possible. Pools may be surrounded by balustrades or decorative planting, or their surface may be diversified with floating lilies, but the designer who attempts such arrangements should first be sure that he is not for the sake of a minor decoration spoiling the main purpose of the pool.

A pool may often have a fountain as a dominant feature, or it may be surrounded or diversified with a number of jets. While these fountains are playing, the perfect reflecting surface of the pool is destroyed. Often such fountains play only at times, merely delivering water enough to keep the pool at its proper level. This is usually for economy of water, but it may be also for the intentional alternation of the effect of moving and of quiet water. In any case when a fountain does not play all the time, the source of the water should be either some feature which is sufficient in the design without the running water, as in the Hercules fountain at Castello, or something which does not interrupt the pool when the water is not playing, as at the gardens of the Generaliffe at Granada, or those of the Taj Mahal.

A pool may form the central feature of a shady bosquet, where the visitor looks down more directly on the surface of the water and sees the reflection of the sky through the interlaced branches of the trees, — an area of brilliant light and color brought down into the darkness of the grove. Such a pool may perhaps lie deeper within its curb, and its beauty may consist largely in the color of the water itself. If the pool can be very deep, a clean white marble basin may show the water sapphire blue. If this depth is not possible, a basin of colored tiles may produce somewhat the same or many other interesting effects. If it be possible that some time during the day a beam of sunshine should fall into the pool leaving the rest in shadow, this should by all means be arranged.

Bridges

A bridge is primarily a structure built for use. Though the landscape designer may seize upon it as giving him a chance of erecting an interesting object where he wishes it in his esthetic design, still it must be fitted to carry traffic and it should look as if it were so fitted. A bridge, therefore, should be in scale both with the road or path which it carries and with the water, or possibly a ravine or another road, which it crosses, when this second feature is of any importance in the com-

position. A very elaborate triumphal bridge carrying an unimportant footpath is likely to appear as absurd as a great stone arch carrying a highway over an insignificant rivulet. Unlike various structures which we have before discussed, a bridge is not seen to best advantage from the road or path which approaches it. If it be a covered bridge, or if there be some kind of pylon on each side of the way at the end of the bridge, there will be from the road a certain sense of an enframed entrance, to any one crossing the bridge, and the view up and down the water from the bridge may also in some cases be similarly enframed, particularly if the bridge is covered. It is in the views towards it across water that the bridge assumes its real value as an esthetic unit in landscape composition. (See Plates 28 and 32.) Almost inevitably it is the dominant object of an enframed composition with many lines converging upon it. Frequently tall planting * on the shores from which the bridge springs will pleasantly increase this enframement and give an additional solidity to the abutment. It is never without its reflection in the water, clear or blurred as the water surface may make it, and the designer should remember that he is creating not the span of the bridge alone, but also its inverted counterpart in the surface below.

Forms and Materials of Bridges

The shape of the bridge may be an arch or a series of arches, with any degree of proportion of rise and span, or it may be abutment and pier and gently cambered line of traffic-way over all, or exceptionally it may be a spider-web construction of steel cables and suspended roadway between two towers. All these shapes may be very beautiful. Modern knowledge of the use of structural steel has produced many other economically efficient forms as well. Many of them are inherently ugly; others we may learn to like, when our present knowledge of the possibilities of steel has passed into a feeling for proportion of parts as it has, long since, in the case of stone.

The form as well as the material will probably be forced upon the designer by considerations of cost, traffic, and local conditions. This form, however, should not only be actually sufficient for structural stability, but should appear to be so.† A bridge can be consistently

* Cf. Planting in relation to bridges, Chapter IX, p. 187.

† For illustrations of various bridge forms see H. G. Tyrrell's *Artistic Bridge Design.* (See REFERENCES.)

light or heavy, according as it may be a suspension bridge, a reënforced concrete bridge, or a stone bridge; but in each case a proportion should be preserved between the apparent strength of the parts and the work which they are doing, even though it might be structurally possible to save material at the expense of apparently functional form. If the designer has a free hand, he may choose to construct a low horizontal bridge in a flat marsh country; a high sharp-pointed arch between two rocky cliffs. If the bridge is to be considered as an architectural structure, perfect as far as may be in itself, it is certainly the fact that no bridge can be more unified than one of a single, well-proportioned arch, or perhaps of a series of arches justly related to the effect of the whole span.

Usually, even the smaller footbridges are structures for an obvious purpose, and they should be so designed. (See Plates 3 and 4.) In a rugged natural landscape, a bridge may well be built, for instance, of large rough blocks of unhewn stone, but these blocks should be laid to make a proper and reasonable bridge, and not in unequal and irregular arches, which do not make the bridge less a man-made structure, but succeed only in making it a bad structure. If it is important that the hand of man be not visible in a particular view, and if a way for traffic across a stream may be managed by means of rock masses which are apparently natural, this indeed may be legitimately done, and such an arrangement may form a very desirable feature, usually at a small scale, in naturalistic rock gardens or similar designs.

Except for the occasional use of a fallen log across a stream, it is practically impossible to make anything which could be called a naturalistic wooden bridge. It is nevertheless possible and often very effective to construct a small bridge of logs and poles, perhaps with their bark still on, which shall, by their surface and to some extent by their form, be congruous and not unduly conspicuous in a natural scene. (See Plate 12.) Usually, however, the quaint conceits of rustic work in gnarled branches and contorted roots are to be avoided, except as an occasional amusing eccentricity. Their forms are usually ugly, and they look, if anything, more like the work of man and less like natural objects than do straightforward bridges of similar material.

Roads and Paths

Roads and paths, like all the other elements of landscape composi-

tion which we have been discussing in this chapter, are differently handled by the designer according as they form a part of a humanized or of a naturalistic composition.* With roads and paths, this difference is greater than with most of the other objects, because in formal and some man-made informal landscape design, the roads and paths are made to be seen and to take their part as important elements in the composition, whereas in a natural or naturalistic landscape, they are usually a necessity to be tolerated, not a beauty to be displayed.

Roads in Naturalistic Landscape

In a naturalistic landscape, as far as it is possible, the road should seem to lie upon the surface of the ground without interruption of the natural modeling. The surface of necessary cuts and fills should simulate the natural surface where possible; where this is impossible their modeling should still be as sequential and unbroken a continuation of the natural surface as the designer can arrange. Usually, if the road lies somewhat below the adjoining surface, it will be less conspicuous. Where a road must cross a view over an open area, in a naturalistic scheme, it may be impossible to conceal the road by planting without thereby interrupting the view. It may be still possible to lead the road across the open space in a depression, deep enough at any rate to conceal the road surface, perhaps deep enough to conceal the traffic as well, and in any case so arranged that the line of sight passes from a surface on the nearer side, related to the whole open area, to a surface on the farther side, apparently continuous with it, and the mind is thus led to suppose that the intervening surface, not seen, is of the same character.

Where a road is to be inconspicuous, its surface should be as little noticeable in color as possible and its edges should not present a clean, hard, and definite line. These considerations make the use of a road material like gravel or broken stone esthetically preferable to that of brick or cement. Asphalt-bound roads, as we have seen, may be constructed with a surface not much different from macadam, and with sufficient care the sharpness of their edges need not be too conspicuous. Such a surface may be modeled into gutters on the sides, but macadam and gravel surfaces are too soft to serve as gutters on any considerable

* For some discussion of roads and paths in the design of the estate, the park, or land subdivision, see Chapter XI.

slope. A gutter of cobble-stones or kidney-stones may be constructed which will make a sufficiently irregular line along the edge of the road. In many cases, however, the better arrangement is to throw the water off the surface of the road on to the adjoining grass surface, carrying the water away from the road, where this is possible, and elsewhere constructing a broad, shallow turf gutter, its outer side joining the natural ground surface by insensible and varied modulations, its inner side joining smoothly to the curve of the crown of the road.

Form of Roads

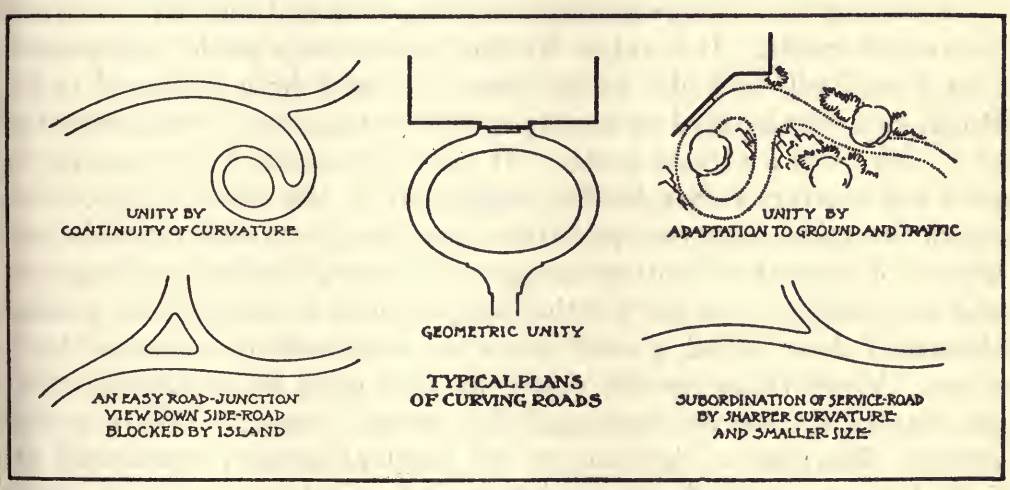
The maximum gradient of the road will be determined by the character of the traffic and the character of the road surface.* Its location upon the topography will be determined as a matter of economics by the directness and cheapness with which the road can be run to the point it seeks without exceeding the maximum gradient and without turns too sharp to be readily followed by the traffic. As a matter of esthetics, however, the road should, as we have said, seem to fit the topography with the least possible disturbance and should seem to go as directly as may be from one point of interest to another. If it vary from directness, it should be only for a sufficient obstacle, hill or valley, or outcropping ledge or foliage mass. (See Plate 15.) If the road be unimportant in character like a country lane, continuity or cleanness of curvature in its line is not essential, and indeed, often not desirable. If the road is important enough to be, whether the designer desires it or not, a considerable feature in the landscape, at least when seen by the traveler upon it, then the unity of its curvature must be considered. (See Plate 31.) Too great an insistence on this unity, particularly through considerable portions of the length of the road, may very unhappily increase the relative importance of a road which should be subordinate in a design; but sequence of curve, smoothness of flow of one curve into another, is certainly desirable, if for no other reason than its obvious adaptation to the passage of traffic. When a

* There is not space here for a discussion, at a scale to be useful, of the interacting economic considerations of road-gradient, cross-section, and surface in relation to the various traffic requirements, flow of surface water, sub-surface utilities, and cost of construction and maintenance. For discussion of these topics, particularly in relation to larger public roads, see such books as Harger and Bonney's *Highway Engineer's Handbook* or Agg's *Construction of Roads and Pavements.*

road turns about an obstacle, it should not of course turn so sharply as to discommode the traffic; on the other hand, having turned as sharply as it conveniently can, it should set off directly for its next necessary point of turning and should not lie upon the landscape in a series of broad and unnecessary loops. It should be remembered in designing a road on plan that it is seen in reality in sharp perspective, and that a slight curve, so long as it is virile and definite, is likely to be of sufficient effect.

Road Intersections

Where a road comes into or intersects another, the first consideration is the smooth flow of traffic in plan and in profile from each road into the other. The practical considerations, then, of gradient, pos-



DRAWING XXVIII

sible radius of turning of an automobile, and view from one road to another to prevent accidents, must come first. If the curved continuation of the side-line of one road into that of another undesirably increases the road surface at the junction, then it may perhaps be well to lead the roads into each other by still more gentle curves and so to produce islands between the branches of the roads, which may be covered with low planting to conceal any undue amount of road surface. (See Drawing XXVIII, above.)

Where two roads bearing very different kinds of traffic must cross each other, — as for instance where, exceptionally, a service road crosses an approach road on a private estate, or where a cross line of commercial traffic must intersect a park road, — one road may be bridged over the other. Usually the less important road will go beneath, although the topography may determine without appeal which shall be the higher road. If the service road passes over the pleasure road, it should usually do so on a well-designed bridge. If the pleasure road passes above, perhaps a wider bridge may be used, with planting on its sides, or the service road may even go through a short tunnel, giving space for planting enough to make it quite invisible from the pleasure road.

Views of and from Roads

A road serves other purposes in landscape design than mere provision for ease of traffic. It is taken by the traveler as a guide: he assumes that a road will lead him to the places to which he is supposed to go. Roads can thus be used to display to those using them certain beauties of a park or of a private estate. If this enjoyment of views from the road is a matter of considerable importance in the whole design, pains should be taken that the spectators come to the various outlooks and objects of interest without retracing their course,* in pleasant sequence, and prepared by each one for the next to come, as where, after passing through a shady wood, a road comes to an outlook over a sunny landscape. Views taken up and down the road must be considered: they are inevitably seen by every one who travels upon it. Where a road changes direction, a view out at the point of change, continuing the line of the road which approaches it and centering on an interesting distant object suitably enframed by the planting about the road itself, is a desirable possibility which the designer should have in mind. (See Drawing XV, opp. p. 122.) Views to be enjoyed from a road, where the spectator looks sharply to the right or left, should of course be enframed by the planting along the road itself, but they should not be enframed with so small an opening that the traveler has been carried by before he has had time to enjoy the view. It is usually desirable also that interesting views should not be seen to right and left of the road at the same time, if it can be arranged that they be seen alternately.

* Cf. Chapter XI, p. 309.

These last two considerations apply especially to roads designed for fast pleasure traffic.

Planting and Roads

The planting along the roadside can be made a considerable factor in its beauty, — indeed, where there are no particular distant views, perhaps the greatest factor. The character of the planting will vary with the surroundings, from the succession of private properties of the suburbs and the trees and shrubs of the planting strip of a parkway to the hedgerows and flowers and shrub-grown walls of the countryside and the natural trees and undergrowth of the woods. In any case the best design will probably be to seize upon the particular character of each landscape unit through which the road passes, and develop it to its best expression, as far as this is possible in a narrow strip along the road, for itself alone or as a foreground to a more distant view. Thus a sequence of different effects will be presented to any one passing along the road. It should be remembered that the scenes presented should be such that they may be grasped and enjoyed by a spectator moving at some speed.

Roads, if they are to be comfortable and pleasant to those who travel upon them, must be shaded. In formal designs and on our streets and ordinary country roads, a more or less consistent and equally-spaced line of trees serves this purpose best. In a naturalistic design, however, such a line of trees might well be an incongruous element in the landscape, and plainly betray the road which it was planted to conceal. In such cases, informal plantations of trees and shrubs may be used, and the whole so designed that the road shall seem to have been run through a fortunately preëxisting series of groups of foliage, rather than that the location of the foliage masses should seem to be dependent on the road. The side of the planting next the road must inevitably to some extent be parallel to the line of the road; but the sides of the planting masses away from the road should be related not to the road, but to whatever open area may lie beyond and be bounded by them.

This necessary placing of planting near the road makes the road all the more a line of demarcation between area and area, between design unit and design unit in the composition. The location of the road must be studied from this point of view also, then, for on its posi-

tion may well depend the main organization of the whole design. (See Drawing XXXV, opp. p. 298.)

Paths in Naturalistic Design

Footpaths in naturalistic landscape are subject to most of the considerations which we have discussed in regard to roads, but being smaller, less important, and able to turn sharper angles and surmount steeper gradients, they may be and should be fitted more closely to the topography than are roads. Where they are used in conjunction with roads, as in park design, and even sometimes in land subdivision schemes of large lots in a varied landscape, the paths need not slavishly follow the road, but may depart from it to surmount a steep gradient in an easier way, to go around a ledge or a tree, even to seek some point from which a view may be obtained. In some designs, indeed, it is not desirable to parallel the road with the path, if the foot traffic may be carried to its destination in some other way as well, since the wheel traffic and its attendant noise and perhaps dust is not the most desirable adjunct to a pleasure path.

Form of Paths

As a general principle, a path, like a road, should go from one point of interest to another as directly as is reasonable under the circumstances. Even in a fairly open country, it is usually possible, by judicious disposition of trees and shrub masses and minor accidents of ground, to make the separate open stretches of path from curve to curve short enough to be fairly direct and still not uninteresting. Where a path continues, however, for a considerable distance over an undulating open country, something more is likely to be necessary for its pleasant appearance than merely a succession of these minor unified stretches from interest to interest. In places at least, it may be well to have a certain correspondence of the curving of the path to the undulation of the ground, — not running in the straightest way over the knolls, not running on a level line around them, but making a sort of compromise between the directness of the path and the suggested more than real difficulties of the topography, — which taken as a whole will make the path more a part of the landscape. This subtle play of curve of surface on plan and profile is an extremely difficult thing to study, except in its larger aspects, on the drafting-board in the office. It must be staked out upon the ground, studied, re-staked, changed in plan and profile perhaps only by inches, but in this way delicately

fitted to its particular situation before the designer can properly feel that he has done his best.*

In designs of a generally loose texture, where beauty of definiteness of form is not insisted on, and especially in rough and broken country, and in wooded country where only a small portion of the path may be seen at any one time, continuity of curve in a path usually becomes of no value whatever (see Drawing II, opp. p. 30), and adaptation to the topography and direction towards points of larger view and to little minor interests of fallen log and outcropping rock are the results to be sought. Such paths, if there is any considerable traffic, particularly in places open to the public where the danger of destruction is greater, should be definite enough and convenient enough to lead the traffic along them and not to tempt people to short cuts and wanderings destructive of the scenery. The path surface, too, should offer reasonably good footing, but beyond this point the less definite, the less conspicuous, the less exactly parallel-sided the paths are, the better.

Where a path which carries but little traffic must cross a lawn and cannot on account of the scale of the design or for some other reason be concealed by the modeling of the ground, it may be constructed of stepping stones set in the turf, slightly sunken so that the grass beside and between the stones conceals them in any distant view. Where the traffic is very light it may go directly over the turf, and if it be possible by the erection of temporary barriers to direct the traffic over one turf area while another is recovering, very considerable traffic may be handled with no particular detriment to the landscape appearance.

Roads in Formal Design

In formal landscape design, the roads and paths take their share with the turf areas, the parterres, the curbs, the low shrub masses, and the flower beds, as parts of the pattern with which the ground is decorated.† The roads and paths, however, can never escape from the

* Cf. Pückler-Muskau's account of his care in staking out a path up a hill, in his *Andeutungen über Landschafts-gärtnerei*, 1834, p. 114–116, and Atlas, plate V e. Also quoted in Parsons' *Art of Landscape Architecture*, 1915, p. 134–135. (See REFERENCES.)

† See also the French so-called informal designs as illustrated, for instance, in André's *L'Art des Jardins*, 1879, p. 787.

fact that they were first made to be used. They must be and appear to be suited to the traffic which passes over them, and they must lead with reasonable directness along the lines over which this traffic might be expected to pass. In a "greeting" in a park, in a tree-colonnaded vista of broad parkway, in a straight stretch of driveway commanding a view from a river bluff, the designer may express the uses of his road in an effective formal composition. Similarly, a drive may approach a building axially, terminating in an axial circle or a forecourt, or perhaps there may be two drives defining a central grass panel, or a semicircular drive swinging in from the street, passing the door, and swinging out again on the same curve. In any of these cases the road is forming or defining a definite and balanced composition.

In the larger formal schemes, such as a great formal park like the Mariannenpark at Leipzig,* or in this country in connection with building groups, like college buildings, the roads may be used as part of the formal pattern of the ground. At a smaller scale this is difficult if the roads are to remain otherwise useful, since the necessary width of the roads and the necessary radius for the turning of vehicles tend to make the roads out of scale with the other units of surface decoration.

Paths in Formal Design

Since foot traffic can turn at a sharp angle and can occupy more or less width of path according to circumstances, paths are much more easily handled as formal ground-surface decoration than roads are. How far they may be subjected entirely to the decorative needs of the scheme will be determined largely by the amount and kind of traffic which they are to bear. In the Harvard College "Yard," for instance, though the roads bear some slight formal relation to the buildings, most of the paths are purely utilitarian, laid out where the traffic tensions require them, and made inconspicuous simply by being no wider than necessary to accommodate those who walk upon them. This is an extreme case, of course, because the student going to a recitation is probably the man of all men the most impatient of circuities. In a garden † on the other hand, which is or ought to be a place of leisure,

* Illustrated with other modern German parks in an article in *Gartenkunst*, June 1914, vol. 16, p. 181–195.

† For an example of how paths may be used as surface decoration in formal design, see discussion under the Garden, Chapter XI, p. 243.

indirectness of paths, if it has some ostensible reason, is not of serious moment. Even here the paths should seem to lead somewhere, almost never making a dead end, or, when they do, terminating at some important object.

A path, being essentially long in comparison with its width, serves rather as a boundary between two masses than as a mass in itself. It is rare, therefore, that a path, unless it be very broad, can be placed on the axis of an open design: its effect is quite likely to be that of splitting the design into two parts. Where there is shrubbery or flower planting of some height on the sides of the path, however, the axis of the view may lie on the path if it be properly terminated by some sufficient feature. Where a path outlines a grass panel or forms a pattern with a number of flower beds, the width of the path must be studied in its relation to the whole design, so that there may be no ambiguity as to what relation was intended; so that, for instance, the scheme shall appear as an interesting network of gravel paths running through an interesting design of flower beds, rather than as a group of flower beds set down in an expanse of gravel. (For examples of paths in formal design, see Plate 30, Tailpiece on p. 23, Drawing X, opp. p. 80, Drawing XI, opp. p. 82, and Drawing XX, opp. p. 158.)

Materials of Roads and Paths

The materials chosen for the construction of roads and paths will have a very considerable effect on their color and texture and on the definiteness of their outline. In the case of equestrian traffic in parks and large private estates, since in any case a softer footing than that of a paved road is desirable, it may be possible, without making any considerable change in the surface of the ground, to construct a way by which horsemen may go from point to point. By careful choice of the gradient of the ground and by choosing and cutting a sufficient open lane among the trees, the way may be made good enough for a gallop without depriving the rider of the sensation of going rather through a natural landscape than along a designated path. If there is so much riding that the natural surface is badly torn up, some treatment of the ground with tan bark or some similar substance may improve both the safety and the appearance of the path.

For light-traffic roads and for paths, gravel, having the advantage of cheapness, has also the advantage of offering a wide choice of texture

and color. If it is to have a definite edge, it must be held in by turf or some kind of curbing, but its normal indefiniteness of edge is often what the designer most desires in an informal scheme. Broken stone surfaces, macadam or telford roads and paths, wear better than gravel but are of a less attractive texture on account of the angularity of the particles. Paths are sometimes made of broken stone or of gravel without any binder, the individual particles lying loose, allowing water to percolate through them, and being kept in order by raking when displaced by traffic. Such a path has the advantage that it is clean and comparatively weedless, but it has the disadvantage that the material flinches under foot and makes a very unpleasant crunching noise when walked upon.

There are at present various methods of construction of broken stone and even gravel roads and paths with some tar or bituminous cement, which give a surface not widely different in appearance from that of ordinary gravel or macadam, but which bind the particles so firmly together that the surface will stand at a steep slope without being washed out by rain, and the road or path can be brought to a definite edge or molded into a definite gutter if desired, without any structural need of a curb. There are also various tar and asphalt surfaces and various surfaces of cement which, though very different in their adaptability to different kinds of traffic, are alike in being very smooth and regular. The tar and asphalt roads are dark in color, and though something may be done to improve this color by rolling in cement or sand while the surface is soft, the lighter color will seldom remain uniform if there is much traffic. Portland cement surfaces will almost inevitably wear smooth under iron-wheeled traffic and iron-shod hoofs. In walks, however, where the destructive force of traffic is less, pleasant surfaces may be obtained in concrete if enough pains be taken. Selected gravel may be scattered over the surface and rolled in while the surface is still soft. This has the disadvantage that much of the gravel has only a slight hold on the concrete and is readily broken out. The concrete may be made with a gravel selected for color and texture, and while the upper surface is still soft, some of the cement may be removed with a stiff broom and water, so revealing the gravel. This surface is more permanent. Concrete surfaces may be

given a pleasant texture, more or less in imitation of tile, by being scored into small rectangular sections, and perhaps having small tiles set in at certain intersections of these scored lines, in some simple pattern. The color of concrete may be modified by the use of various pigments in powdered form, but this should be done in moderation, both because too much of the pigment is likely to injure the concrete, and because the brighter colors are likely to be harsh and unpleasant in a pavement.

Brick may be used for roads, brick and tile for paths, giving a great range of tones of terra-cotta and gray and yellow. The texture of the material itself gives a great deal of choice, from the smooth surface of tile through the surface of water-struck, sand-struck, and wire-cut brick to brick surfaces pressed into patterns and textures or projecting lugs. The larger texture of the separate blocks and their cement mortar joints gives an opportunity not only for simple variation of surface but for patterns of any degree of complexity. In roads, a simple laying of the bricks breaking joints, with their long dimension across the road, is usually best. Any pattern of recognizable forms, except perhaps two stripes accenting the sides of the road, is likely to be wasted in a long road, particularly if the traffic is fast. In paths, many interesting patterns may be wrought out by the use of brick or tile or both in combination.* In larger paved areas at the junction of paths or at the foot of steps, or on terraces, for instance, where some further interest of surface is desirable, more elaborate patterns may be used and even a greater diversity of material, perhaps with the introduction of slabs of marble or of glazed tile in various colors. Stone laid in flat slabs is a paving which lends itself particularly to the construction of garden paths and which is much used for this purpose, especially in England. There is a great choice of color and texture, and the more the slabs are worn, the better they are likely to appear; indeed, some particularly pleasant walks in our modern American gardens have been made from the worn and discarded stones of the sidewalk of a nearby city. Stone slab paving may be arranged in formal shapes or it may be laid as it comes from the quarry, rectilinear only where it comes on the outside edge of the walk. When laid in loam, the

* See illustrations in Jekyll and Weaver, *Gardens for Small Country Houses*, Chapter XV, Methods of Paving, p. 171–178.

cracks between the stones may soon become full of moss, and indeed, where little traveled, they may be planted with very low-growing, rock-loving plants.

The restful green surface of turf paths, not offering much color contrast with other foliage, makes them especially suited both to broad central open spaces, rather turf panels than paths, and also to the most subordinate paths, merely ways to go among the flowers. The upkeep cost of such paths is considerable, if the grass is kept smoothly cut and the edges trimmed, as is true of all sod edges for flower beds, for unless the flowers are kept back from the sod they overshadow it and destroy it in places. When paths of different width and importance form parts of a pattern, this relative interest may be recognized by the choice of their surfacing material. A path along a terrace might be stone-paved, the main garden paths might be of gravel, and the subordinate paths, among the flower beds, of grass.



CHAPTER XI

TYPES OF LANDSCAPE DESIGNS

Landscape Designs According to Typical Uses

When the landscape architect comes to apply to the actual problems which he handles professionally the knowledge with which his experience has provided him, he tries to meet the demands of each problem with a design which, though almost necessarily sacrificing some factors which are theoretically desirable, combines on the whole the maximum of esthetic and economic excellence possible for him to create under the particular circumstances.* These circumstances are the local conditions of topography, soil, climate, and so on, the financial means available, the preferences of those whom the landscape architect serves as to the appearance and expression of the design, and the economic uses † to which the design is to be put, with their resultant fixing of the sizes and shapes of many parts of the composition. No two problems are ever exactly alike, but very many problems arise in which people of the same general habits, ideals, and social condition desire land to be arranged for use and enjoyment of much the same kind. Beauty of appearance may be sought in many different ways, and where one kind of beauty proves to be impossible with the sizes and shapes necessary to be used in the design, another kind may be attained, perhaps at a different scale and with a different esthetic expression. Each typical well-defined use, however, has its more or less characteristic effect on the composition, no matter what the other circumstances may be. The result of this fact is that the ordinary work of the landscape architect falls into classes most readily according to use, and where this use is a common one, — one in which the habits of men are much alike, — the designs which serve this use will have much in common and may well be discussed together. Some of the types of landscape designs

* Cf. Chapter III, p. 27.

† Cf. Chapter II, p. 18.

according to use which naturally occur in the practice of landscape architects in our time and in our condition of society are: — the garden; the private estate; the "land subdivision," or development of land for residential use; the country club and country hotel grounds; the grounds of colleges and institutions, hospitals, and other public or semi-public building groups; the grounds of public buildings; exposition grounds; amusement parks; zoölogical parks and botanical gardens; cemeteries; playgrounds; the smaller intown parks; the larger country parks on the outskirts of our cities, and the great landscape reservations scattered throughout the country.

It is, of course, quite impossible in an introduction to the study of landscape design to discuss all the classes of designs which meet even all the more important uses of our modern American society. We shall consider in this chapter four types of landscape designs: the garden, the estate, land subdivision for residential purposes, and landscape parks and reservations. These types are chosen because they may exemplify both humanized and naturalistic design, and because they show the meeting by the private citizen of two of his most important needs, his dwelling and his private outdoor esthetic pleasure, and the meeting by the community of the needs of the citizens for amenity of dwelling and for outdoor recreation. These examples show, too, the way in which the field of landscape architecture merges into those of horticulture, architecture, engineering, and city planning; and in the section on land subdivision, the discussion considers how far it is possible to translate landscape beauty into terms of economic value, to create it at a certain cost and to sell it in the market at a profit.

PART I

THE GARDEN

DEFINITION AND USE OF THE WORD "GARDEN" — ESTHETIC CHARACTERISTICS OF A GARDEN — Inclosure — Plants in the garden — Unity of effect of whole garden — A garden recognizably a work of design — FORMAL AND NON-FORMAL ARRANGEMENTS — WAYS OF GIVING A GARDEN DISTINCTIVENESS — CHOICE OF STYLE — COMPOSITION OF THE GARDEN — Its compositional elements — INCLOSURE MATERIALS — Retaining walls and banks — High boundaries: their composition and decoration — The house as part of the garden boundary — GARDEN "FLOOR" MATERIALS — Typical compositional arrangements of the garden floor — OBJECTS MARKING POINTS OF INTEREST IN THE GARDEN COMPOSITION — Suitability of different objects to this purpose.

Definition and Use of the Word "Garden"

In literature, and in common use, "garden" has been a very much overworked word. It has meant, to the horticulturist, any place good for plants; to the suburban land-owner, almost any area for outdoor restful pleasure; to the poet, a place for meditation, with certain associations with the past; to the landscape architect, a unit of design which has certain characteristic beauties and appropriate functions. The word has acquired such different meanings, and such various associations, that it is impossible to speak of a garden in any general sense, without suggesting a number of attributes that are not necessarily characteristic of a garden. On this much, however, in a broad way, almost every one is agreed: that a garden is a man-made, bounded, outdoor area, containing plants. Now we are not interested in the definition for itself, nor primarily are we interested in what different objects have, in times past, been called gardens. We are discussing a fairly definite landscape unit, which serves a purpose not served by any other unit, which takes its place in the scheme of the suburban country estate, large or small, which produces its own special effects, and for which, in spite of the great ambiguity of the word, the best general term is "garden."

The landscape designer is naturally most interested in those gardens which are works of art; that is, those gardens which are made with some consideration of their pleasant esthetic effect. For our purposes as designers, therefore, we may well consider what seem to be desirable esthetic characteristics which a garden may have, suitable to our times and customs. In its effect on the beholder, a garden is typically a place of leisurely restful enjoyment, a retreat from the noise and hurry of the outside world, offering a succession of beauties and pleasant interests; and interests and beauties of this peaceful kind are hardly to be found anywhere so readily and so fully as in the development and changing natural growth of flowering plants and in our association through them with the large and inevitable forces of Nature.

Esthetic Characteristics of a Garden

A garden should be a single unity, involving a certain feeling of defined extent; largely to enable it to produce this effect it should be inclosed, or, at least, recognizably segregated from the rest of the landscape. It should have plants growing in it, though not necessarily "flowering" plants. These plants, and the other materials which are used, should be arranged in an esthetic composition, and this composition should be evidently the work of man.

Inclosure

Let us discuss these points. We say that a garden must be inclosed, bounded, sufficiently segregated from the landscape about it. Now it may be so segregated by being completely surrounded by some screen, high enough to hide all the outside objects. It may lie in the courtyard of a building. It may be inclosed by a wall or a hedge of an informal planting, so high that, to any one inside of the garden, the outside world is entirely cut off. Similarly, the screen around the garden may be a lower wall or hedge, but behind it may be a tall tree mass or something of less definite form which, nevertheless, completely blocks any view from the garden. Any such segregation as this leaves the designer as free as he ever can be to make his garden as though it existed in a world of its own.

Again, the boundary, though in effect completely surrounding the garden, may allow of glimpses into other areas, which, nevertheless, are so definitely segregated from the garden that, though they may be parts of the same general scheme, they are evidently not intended to be part of the same visual unity. Certain views into other units

through narrow openings, or certain partial views over the surrounding screen, need not, necessarily, spoil the sense of segregation of the garden.

Or, there may be a screen along only a part of the boundary. The garden may, for instance, be limited by a retaining wall or bank on one side, over which a view may be had into another area to which the garden is related as a part of the same schematic composition, or into a distant landscape, related to the garden scheme only in some less obvious way. The segregation in this case may be sufficiently expressed by the obvious difficulty of access across the retaining wall or bank from the garden to the lower level beyond. Such an arrangement may allow a visual relation of the garden to other units, without destroying the feeling of unity of the garden itself. The garden may conceivably serve as a foreground for the scene beyond, the enframement which directly and physically incloses the garden serving as the frame of a picture, the central interest of which is the view outside of the garden. Or the area outside the boundary may make much less appeal to the attention than does the garden within, and so the garden may gain a sense of ampleness and freedom while still remaining the center of interest of the whole scene. The result particularly to be avoided is, of course, such an arrangement of the composition that the attention wanders from one area to another of a different effect, without settling upon some one as dominant in the design.

Again, exceptionally, the garden may be inclosed, not by any continuous line, but by a series of separate objects: a colonnade, a row of tree trunks bearing overarching foliage, a row of clipped evergreens. Where such a boundary lies at right angles to the line of sight, it diversifies the view but does not entirely interrupt it; where the line of separate objects lies nearly parallel to the line of sight, they may be so foreshortened one upon another in perspective as to form a complete screen: a double function in design which is at times extremely desirable, and which is not, of course, at all confined to the garden in its application.

Plants in the Garden

Almost any one will agree that a garden is an area which contains plants. We do hear of a "garden of colored sands," even a "garden of statuary," but here the term is really used, for lack of a better, to

signify merely a unit of landscape design. To most people the greatest beauty of plants is their flowers. And it is natural that most of the gardens in the world which are intended to be beautiful should be wholly, or partly, flower gardens. But plants have other beauties, and a garden is really none the less a garden for depending primarily for its attraction on the color of leaves or of brilliant fruit, on the contrast of evergreen and deciduous foliage, on tree form, or on the beauty of evergreens, turf, walks and walls, and water, and the beauty of their arrangement.

Unity of Effect of Whole Garden

A garden, as we have said, should impress the beholder as one unit; if such a landscape design consists of several different segregated areas, it is better to call it a series of gardens than to call it a garden. Of course, a garden, or any other landscape unit, for that matter, can seldom be seen all at once. The observer is normally inside of a garden, and part of the garden is likely to be hidden, or at least out of the observer's angle of vision. The test of the unity of the garden, therefore, will be not entirely the perfection of any one view, but the effect on the observer of what he sees from several viewpoints, the final conception which he takes away with him of the garden as one thing, physically and esthetically.

A Garden Recognizably a Work of Design

A garden should be, and should appear to be, the work of man. A naturalistic area which looks as though it had come about purely by the operations of nature, or an area which has really so come about, would be called a garden only by a simile. Man's will may appear in the design of the garden, however, in two quite different modes of organization.* The garden may be, in the common and loose term, formal; that is, it may depend for its organization and its consequent beauty on recognizable forms, in repetition, sequence, and balance, in the simpler and more mathematical ways, particularly in symmetry. (See Drawing III, opp. p. 36.) Or, on the other hand, without at all attempting to make the garden look as though it were a work of nature alone, man may strive to get beauty in repetition and sequence and balance without dealing in definite and geometrical forms. (See Plate 4.)†

* Cf. Chapter IV, p. 34.

† Compare the formal and informal gardens, given in Drawing XXX, opp. p. 260, and Drawing XXXII, opp. p. 274, and also the main lawn in Drawing XXXI, opp.

Formal and Non-Formal Arrangements

In the formal design the different areas in the garden, the different flower beds, walks, and so on, will have definite and recognizable formal outlines. We shall use definitely clipped and edged sod, at least, and perhaps stone or brick edgings, in order that these forms on which the essence of the design depends shall be, as they must be, recognizable and definite. The objects which are most important in the garden, to which the interest is led by the other features in the design, must almost necessarily be more definite still, more obviously man-made, still further wrought out in their forms. (See Plate 29.) And we are likely to choose for these positions architectural or sculptural objects, because it would be very rare indeed that so loose-textured a thing as a tree or an evergreen shrub, even a clipped tree or shrub, would be important enough, formal enough, to dominate the rest of the design.

In so-called informal design we have a less possibility of use of architectural and sculptural objects. Naturally, we cannot arrange many formal objects in the same informal design: their definiteness, if they were formally related, would make the design formal; if they were informally related, it would make the design confused. Our informal designs, therefore, will be, with some exceptions, made of informal material, such as trees, shrubs, and flowering plants. We are still obliged to get unity, as we have said, in repetition, sequence, and balance, but we have intentionally put aside the possibility of getting that repetition, or sequence, or balance in an obvious and symmetrical way. It will be something more occult, something less easy to do, and less easy to perceive, and as the organization of the design is less striking, our attention will at first fall the more on the objects themselves which make up the design; the beauty of the individual plants will, at least at first glance, tell for more as the beauty of arrangement of the area made up of plants is less obvious.

Ways of Giving a Garden Distinctiveness

The choice of the main mode of organization of his garden, whether it is to be formal or informal, will usually be made plain to the designer by the general organization of the whole property of which the garden forms only a part, and by the topography and the size and shape

p. 268, which is in a sense a translation into informality of the formal garden of Drawing XXX.

relations of the area which is to be used as a garden. Often, as in all landscape designs, topographic conditions, cleverly overcome or taken advantage of, will give a greater originality and interest to the scheme than the designer would be likely to get without the stimulus of the difficulties.

If the designer has the opportunity of making several gardens on one estate, or if he is working for several clients in the same neighborhood, and he does not wish to repeat an effect, he may cast about for ways to give each garden some distinction of its own. The main form, deliberately chosen or forced upon the designer in a general way by outside considerations, may serve as a sufficient mark of individuality, though it is rare that individuality need stop with form. In any case, if the main form is to be insisted on, the interior arrangement should accent and display it. A square or circular garden might well have a central feature and a radial direction of attention; a long and narrow garden might have features at each end with an unobstructed view between them.

The season of greatest beauty can well be the particular thing pitched upon to characterize a garden. We can have a spring garden, a summer garden, a fall garden. Our choice in this regard will be motived by the mode of life of our client, whether he is to enjoy the garden throughout the year, or whether he is to see it only at certain seasons.

The material, both the structural material, the rock used in the walls, for instance, and particularly, of course, the plant material, the predominating planting, will put a definite stamp upon a garden: we can have a wall garden, a garden of rock plants, a rose garden, a lily garden, and so on. Or, we may confine ourselves to one color of flower, at least for a certain season: we can have a blue garden, a white garden, a pink garden, in the spring, and later in the year other colors may appear.

A garden may have a definite effect because it calls up some particular association, as, for instance, an old-fashioned New England garden, with everything in it carefully chosen, carefully wrought out, to increase that one associational beauty. Of course, it must have beauty of form and color also in any case, but it will have all the greater unity

for being definitely reminiscent of one prototype throughout. Sometimes, exceptionally, this matter of association can be carried further. We might have a Shakespeare garden: a garden which contained as far as possible all those, and only those, flowers which are mentioned in Shakespeare. That would be carrying association rather far, because, of course, Shakespeare's botany, like Shakespeare's geography, was largely a matter of his immediate artistic need.

Choice of Style

If the garden is visually related to the house, — as it often is, and usually should be when it is formally designed, — the style of the house will influence the style of the architecture or sculpture appearing in the garden, and, to a very considerable extent, fix the kind of organization of the whole scheme which will be possible under those circumstances. If no dominant object of already determined style thus fixes the style of the garden, and if the associational value of some historic style is desired, that style would normally be chosen for the garden which best expresses the mode of organization arising from the local circumstances and the general esthetic effect that the designer seeks. These same considerations we discuss later in reference to the estate.

Composition of the Garden

If the garden is to be recognized as being physically one unit, it is evident that enough of its boundary must be perceived from within to define its main shape. It cannot have features in the middle of it so large that the part of the garden behind these middle features is secluded and thrown out of the composition. And so it comes about that by far the commonest type of small garden is an arrangement which is open in the middle — with some not too large central feature, perhaps — and with its elements of greatest height near its outer boundary. Such a garden is a sort of outdoor room, decorated on the walls and on the floor, and appropriately furnished with objects interesting in themselves and related to the main scheme of the design.

Its Compositional Elements

We can consider the inclosure: the bounding wall or hedge, its height and its form which give the main form to the garden, its composition and minor points of interest and their relations to the other elements of the scheme. We can consider the floor and its composition and decoration: the paths, the beds, the pools, and the various ways of subdividing the garden floor into pleasant proportions and interesting patterns. And again, we can consider the various individual objects

of interest in the garden: such objects as may be placed at the point of convergence of several paths, or which may mark an axis or strengthen a corner; objects which attract attention to themselves, and thus make more important the position in which they are set. Since formal composition is much easier to visualize and to describe and discuss, and since very many gardens are essentially formal, we will continue our discussion of the garden in terms of formal design, but it should be borne in mind, nevertheless, that gardens need not be formal, and moreover that much of what we say in relation to design in formal shapes is applicable, with proper modifications, to design in informal shapes, no less intentionally determined, but not to be so definitely described.

Inclosure Materials

It is possible, as we have seen, that a garden should seem to be sufficiently inclosed and segregated* although it is open on one side so that the visitor may look from it into another unit of the larger design; but if the garden is to be itself satisfactorily unified under these circumstances, there must still be a sufficient line of demarcation on the open side. A low hedge or fence may be sufficient, a low retaining wall may be ample, where the view rises from the garden, as where, for instance, the garden lies at the foot of an open slope. A low fence or wall, however, is likely to seem unmotived if the elevation of the ground surface is the same on both sides of it. An elevation of the surface of the garden above that of the outside unit, even though this difference of elevation is very slight, will usually serve as a sufficient boundary. It is, exceptionally, possible to mark the break in grade merely by a grass bank, or by a retaining wall with its coping practically flush with the surface of the garden. More commonly, however, some parapet — hedge, wall, rail, or balustrade* — extending above the surface of the garden will be necessary, both as a guard for the top of a dangerous wall and as a stronger marking of the garden boundary, especially as seen from within. For practical purposes this parapet may be as low as fifteen inches if it be sufficiently wide, and it seldom is more than waist high. Otherwise its height will be determined by its proportions in the whole design of the garden,

Retaining Walls and Banks

* For a discussion of kinds of inclosures, — hedges, walls, fences, and so on, — see the sections devoted to these in Chapters IX and X.

and by its relations, as seen from the outer side, to the retaining wall beneath it.

High Boundaries: Their Composition and Decoration

Where a garden boundary rises to more than the height of the eye, it usually is of itself definite in shape and marks the definite shape of the garden. The views across the garden terminate against it, and the important points in these various views are recognized by appropriate decoration and change of shape in the boundary structure. If the form of the garden itself is to be particularly accented, the corners of the garden boundary may well be made stronger. If a main broad axial view terminates against the inclosure, its center may be marked by a shelter, a pergola, a semi-circular bay in the garden wall, perhaps half inclosing a pool. (See Plate 30.) Where a narrower view, like a vista down the axis of a path, terminates against the boundary, it may be marked by a gate in the wall, a hooded seat against it, a niche with a statue, or perhaps a wall fountain. If the feature be a gateway, the interest in it may consist of a glimpse out of the garden, so narrow as not to interrupt the effect of continuity of the boundary or, whether or not the gate admits of a view out of the garden, the interest may lie primarily in the gateway itself as a decorative feature of the wall. (See Drawing XIII, opp. p. 100.) It often happens that a gateway assumes great importance in the design, perhaps recognizing the intersection of the main axis with the boundary. (See Tailpiece on p. 23.)

Sometimes the boundary structure of a garden may be planned to give a sense of inclosure, but not to be in itself conspicuous, screening the outside world, but serving only as a background for more interesting objects within the garden. A vista down a path running towards such a boundary might be terminated by a free-standing statue or a seat merely backed and protected by the bounding hedge or fence or wall. Where complete inclosure of the garden itself is desirable, but where the site of the garden commands from one end a good view into the adjoining landscape, it may be possible to construct a shelter which will serve as a terminal feature of the main axis, a dominant object in the surrounding wall and a continuation of its inclosing mass, but which, from its farther open side, will also command the view and furnish a shady place from which the view may be seen.

The House as Part of the Garden Boundary

Where one façade of the house forms also a wall of the garden or a major part of it,* this façade of the house must be considered in its relations to the garden design. In a formal scheme it is normally symmetrically related to the whole garden and the main axis of the garden is terminated by a feature in the façade of the house. (See Drawing III, opp. p. 36, and compare Plate 1.) It is much better, where it can be done with due regard to the architectural planning of the house, to have this feature a door, a French window, or a group of windows recognizing a room in the house which commands the garden. A chimney or any solid space between two windows, if it be on the axis of the garden, is very likely to give an unpleasant effect of blindness and of splitting the composition of the house façade into two parts. Where the façade design of the house is necessarily unrelated to the axis of the garden, although the house mass is approximately symmetrical upon this axis, it may be possible to set the garden at a lower level and to interpose between it and the house a terrace with a flight of steps properly designed to relate axially to the garden below, but to lead easily to the exits from the house above. Where a house dominates a garden, it affects the scale of the whole garden design, and any other structures which face upon the garden must be studied in their mass relation to the house. If a garden shelter so situated, when made of a size appropriate to its use, appears too small in relation to the house, it may still be possible to treat the shelter as a decorated and roofed portion of the surrounding wall, and so by sacrificing its importance as an independent building prevent its competition with the larger house.

Whether these boundary structures are to be walls or lattices or fences or hedges will depend on the choice of expression and the choice of expenditure which the designer makes for his whole scheme. A design may be expressed in any of these terms with no less of excellence so long as the expression is in each case consistent.

Garden "Floor" Materials

As we have seen, if the garden is to appear as a single area inclosed, it must be sufficiently open within so that its farther boundary may be to some extent visible. The floor of the garden then will serve two purposes in the design; it is a foreground over which is seen the composition made by the farther boundary and whatever free-standing

* Cf. p. 259 under the Estate.

objects are seen against it; and it is itself a surface to be decorated in patterns of turf and path and pool and flower bed, and a setting for the various free-standing objects which, while not interrupting the open unity of the whole garden, are in themselves objects of interest and further accent the pattern of the garden floor. (See Plate 30, Drawing XX, opp. p. 158, and Tailpiece on p. 23.)

This pattern will be built up primarily in relation to the main axes of the garden and the views along them, in relation to the paths and where they must lie in order to serve reasonably well the lines of traffic in the garden, in relation to the practically necessary sizes of shelters and walls and steps and flower beds, and under these restrictions in relation to the considerations of pure design which would make a decorative flat composition out of the elements at hand.

Typical Compositional Arrangements of the Garden Floor

In its recognition of the most important views within it, the garden is likely to be arranged in one of two ways: there may be an object of interest at each end, and the important view may traverse the whole length of the garden, terminating on one or the other of these objects (see Plate 30); or some object of interest may occupy the center of the garden, important enough to dominate the scheme, but not large enough to destroy the total unity within the inclosure. (See Plate 29.) In the first case the center of the garden will be entirely open, or at most decorated with objects small enough and low enough not to destroy its effect of openness; in the second case, the sense of one dominant object enframed by the rest of the scheme would probably lead to an open space in the middle of the garden in which this dominant object is set. The first arrangement develops a strong feeling of axial relation; the second produces rather the feeling of all the outer parts of the garden being related inward towards a center.

The floor of this central portion will be decorated with treatments of a flat surface as we have seen, — pools, lawn, paths, low flower planting, or carpet bedding. As far as the accommodation of traffic is concerned there will probably be a tendency to run a path from end to end of the garden on the axis. Except in the case of a long and narrow scheme, rather a flower-bordered allée than a garden, such an arrangement is likely to be bad. A very broad path surface, even if it be as interesting a surface as a stone-paved walk, is uninteresting by com-

parison with the flower beds, and a narrow walk in the midst of a reasonably broad scheme is very likely to produce the effect esthetically of splitting the design into two distinct halves. It is usually better therefore to place a panel of some width symmetrically on the axis, — pool or turf area or low flower bed, — and to have the paths run symmetrically around it as borders, being properly proportioned to it for that purpose. (See again Plate 30.) For further intricacy of design and greater definiteness of outline, the paths may be curbed with a stone or brick edging, the flower beds bordered with a line of particularly formal-growing plants. Farther away from the open center of the scheme may be other paths running between beds of higher planting.

The different main areas in a garden design may be characterized not only by differences of surface treatment but also by differences of level. The center panel may be sunk and there may be raised paths around the outer portions of the garden near the boundary. These differences of elevation must not be so great as to make in effect several areas out of what is intended to be one. The permissible difference of elevation is of course partly a matter of its proportion to the size of the whole garden and to the separate units, but in any case it can seldom be so great that a person standing at the lower level is unable to see the surface of the level above. In larger designs sunk panels are sometimes used even of greater depth than this, where the area so sunk often contains and enframes perhaps a fountain or other interesting object which can thus best be looked at and which, set at its lower level, does not interrupt a long view from end to end of the garden.

Just what the total pattern will be in which the designer arranges his various ground-covering materials ought to depend on the conditions of the particular garden and in the work of a good designer would seldom be twice alike.*

Objects Marking Points of Interest in the Garden Composition

Besides the larger structures in the design of a garden, like pergolas, shelters, or the façades of other buildings, there are also many objects of less size, but each attracting interest in its own way and so

* For a discussion of the individual elements of the floor pattern, — pools, flower beds, paths, and so on, — see the sections devoted to these in Chapters IX and X.

itself dominating some subordinate part of the whole composition. In every case, the function of objects of this kind is so to attract, to hold, to direct the interest as to explain and unify and at the same time diversify the whole composition.

One object may occupy the center of a garden, standing free in its own grass plot, and being from all points of view in the garden the most interesting single thing, to which the rest of the design is tributary. A sundial, a statue, a fountain, in the midst of a simple garden, is an example of such an arrangement.

One object may form the focal point of a vista, dominating a converging pictorial composition and furnishing a sufficient motive for the direction of a path and the bounding masses of foliage.

Objects may mark an axis by lying at its opposite ends like two gates in opposite walls of a garden, even though there be no axial path between them; or objects may mark an axis by being symmetrically disposed about it, like two cypress trees on opposite sides of a flight of steps or two lines of lime-trees enframing a central grass panel.

A number of objects placed at the corners or dominant points of a formal shape may define and accent this shape and make it more important in the composition. Such a use would be served by vases or clipped topiary pyramids or statues, placed at the corners of a grass plot or a flower bed.

Suitability of Different Objects to this Purpose

It is noticeable that the different objects which we find in gardens are differently suitable to these functions. A statue may serve them all: it may stand alone at a central point of interest; it may terminate a vista; it may stand with another on opposite sides of a gate; four statues may mark a central grass plot; a row of statues may stand one on each pier of a balustrade; two statues each in a niche or standing free on a pedestal at opposite ends of a walk may definitely mark a center line. Sundials, bird-baths, gazing globes and, usually, free-standing fountains are likely to be best employed as dominant objects each in its own part of the design, with no other of its kind in the composition. This is partly because of their use which makes more than one unnecessary, partly because they are so shaped as to be good in appearance from all sides, and partly because it has become traditional, as it were, to use them in this way. A vase, an urn, a plant in tub or

pot, topiary work, even a tree with particularly striking form, while seldom important enough in the design to stand as the independent center of interest, or terminus of a vista, may serve, each in its own way, any of the other uses which we have just mentioned. It is evident that in the choice of objects to be used for these purposes the designer will be influenced by the scale relation of the object to its surroundings, by its congruity in other respects, and by the amount of dominance over its surroundings which he wishes it to express. Seats of various kinds have their best use as terminal points for paths and vistas: they are not interesting enough as objects to stand free like a sundial, and their use as resting places makes them the natural terminus of a walk. Very commonly, where a larger object is desired, or for purposes of shelter, a seat may be placed against a wall and hooded with a lattice, or it may form a part of an arbor or a shelter of still greater pretensions. Statues in niches or wall fountains are particularly adapted to the termination of a vista against a boundary, but any object of interest which is correct in scale may complete a vista, — a sundial, for instance, may serve in this way, for several paths which relate to it radially, while serving also as a central point for the whole garden.

There is always temptation to terminate any straight path with some kind of vista point, but if this path is, for instance, part of the rectangular path-border which surrounds a central grass plot and the paths on each side of the grass plot are intervisible, then its larger function in the design is that it serves thus as a border, and a vista point at the end of any straight run of the border might well be a confusion of the design rather than an enhancement of it. In his use of all these various objects of interest, the designer must take care that by unduly accenting subordinate points, he does not destroy the main unity of his design.

PART II

THE ESTATE

THE ESTATE AS EXPRESSING THE OWNER'S DESIRES — PHYSICAL ELEMENTS OF THE ESTATE — THE HOUSE — Effect of interior arrangements on house form — House form as affected by choice of style — Location and orientation of house — THE HOUSE TERRACE — THE FORECOURT — THE GARDEN AS A UNIT OF THE ESTATE — PLEASURE BUILDINGS — HOUSE SERVICE AREAS — ESTATE SERVICE BUILDINGS AND AREAS — The greenhouse — Reserve and vegetable gardens — TENNIS COURTS AND AREAS FOR OTHER RECREATIONS — THE OPEN LAWN — TREE-SHADED AREAS — NATURAL CHARACTER UNITS — ACCESS — Approach roads — Paths — THE DESIGN OF THE WHOLE ESTATE — Choice of site for an estate — Apportionment of estate area into the units required.

The Estate as Expressing the Owner's Desires

In developing a piece of land for his home in the suburbs or in the country, a man expects the property to satisfy certain fairly definite desires. Often he has been a city dweller, who has been looking forward through half a lifetime to this fruition of his work and increasing prosperity. For him commonly his out-of-town property represents ease, leisure, space, outdoor beauty, — something to be paid for and enjoyed, but seldom something which itself produces any considerable income.

Often, whether country bred or city bred, the landowner intends to use his property wholly or dominantly as a source of revenue. This commonly entails the use of a considerable area of land, if the ordinary agricultural operations are to be carried on at a profit. But some part of the whole area must be set aside for comfortable and civilized living, and in every part enjoyment may be a by-product if not the end primarily sought. As landscape architects, we are more directly interested in those considerations, economic and esthetic, which concern the pleasant living of the owner, rather than in those relating to the earning capacity of his land. But though there is more scope for the designer's fancy in those estates whose owners can afford to seek en-

joyment without carefully counting its cost, his commoner problem and in a way his greater service to the community is in those cases where such beauty as is produced must lie in skillful esthetic handling of objects and areas economically necessary, rather than in extensive construction for the sake of beauty alone.

In the great majority of designs for private places which the landscape architect makes, in our time and country, the owners are not very widely different one from another in their ways of living and in their more important requirements in use and enjoyment for living on their land. Each man will wish, first of all, a proper and convenient house in scale with the life which he expects to lead. He will also wish to own a piece of land which, together with the house, satisfies his sense of possession and plainly expresses his ownership. Usually a part of that expression will be some sense of boundary between what he owns and the neighboring properties. He will want a place for hospitality, for entertainment of his friends; and for himself and for his friends he will want a variety of interesting things to look at, and a number of interesting things which can be done. Further, he will wish to enjoy the expanse of free spaces, he will be glad to have a piece of property from which a distant view is obtained. He may wish to take more or less active exercise of various kinds; he will also wish an opportunity to sit and rest, at his ease. He may wish to make his life as much as possible that of a "country gentleman," and so he may develop at least a part of the estate as a farm, even though he knows that it may never be a financially successful farm.

Then there will be also in the minds of different owners innumerable different and special desires. One man may wish a special place for his children to play. Another man may be particularly interested in golf, and may desire at least a putting green, or a small golf course. One man may build a private squash court, another a swimming pool, or a skating rink, and so on. The form in which the owner will realize all these desires, or some of them, will vary from the country estate of many acres to the unpretentious suburban lot, according to the means and the taste of the owner.

Now the ordinary owner has not, himself, the special knowledge necessary to make his estate properly satisfy these desires; indeed, it

often happens that the whole matter is quite new to him, and he is only dimly aware of what pleasures he may be able to obtain from his possessions. There is, therefore, in most cases, room for a professional designer. And this designer has the task of interpreting the wishes of his client, of giving them proper expression in the client's estate. But the designer should feel that, after all, it is the will of his client which he is expressing. The good designer has the technical training and the artistic sensitiveness which enable him to express his client's will. He has, also, the experience in such matters which enables him to know ahead of time what desirable things are possible of attainment in a given case, and he can therefore guide his client in his desires. In this sense, the fundamental relation between the owner and the designer is that the designer is enabling the owner to get, in the most economical and in the most beautiful way, the things which the owner himself wishes to obtain.

Physical Elements of the Estate

There may be found, on an estate of some size, the house; the house terrace or veranda or other floored or paved outdoor area near the house; the forecourt or carriage turn; the garden; pleasure buildings; house service areas; service buildings; areas for the use and upkeep of the grounds; areas for sports and games; some large open area, often a lawn; woods, or some tree-covered area; and, in the larger estate, other natural units, — brooks, ponds, hills, and so on. Also there must be provision for access for wheel and foot traffic, pleasure and service, connecting all these areas and making them economically part of one scheme.

The sequence in which we have stated these objects is not a sequence of importance, but is only for convenience in discussion. Their importance is different for different owners and for different situations, and of course they do not all occur in all designs. The plans given as examples (Drawing XXX, opp. p. 260, Drawing XXXI, opp. p. 268, Drawing XXXII, opp. p. 274, and Drawing XXXVII, after p. 356) show several different ways, out of unlimited possibilities, in which these units, or some of them, may be combined in the estate. In our discussion of the estate we shall have in mind rather the property of medium or large size than the smaller house lot, because in the larger area the principles in which we are here interested are better exemplified, since the

design is not so definitely tied by considerations of use and available space. But the difference in the design of estates of various sizes is usually one of degree rather than of kind. The general principles will apply, with modifications, to estates of all sizes ranging from the private estate so small that the house and other buildings dominate the design inevitably, to larger estates the expression of which is less restricted, and in which, in many cases, units of design organized according to landscape characters rather than according to the will of man may be developed.

In these larger estates the relative esthetic importance of the various considerations is quite different from what it is in smaller estates. The house and its architectural surroundings, while still the focus of the whole design, still the object of most importance for its size in the whole scheme, is no longer dominant by its visual aspect as it inevitably is in the house lot. In other words, in the larger scheme the house is only one of many objects which go to form the whole design, and the dominance of the house, in so far as it is dominant, is due to its associations, to its greater precision and elaboration of detail, and to the radiation throughout the design of lines of view and necessary lines of traffic to and from the house.

The House

The internal arrangement of the house is important to the whole plan of an estate, both because of its effect on the shape of the house, and so on its mass as an object in the design, and also on account of the relation of the areas about the house to its doors and windows, and to the views from it.

The larger the house is, the more possibilities of arrangement of rooms there will be, because commonly the more servants will be kept, and so short access for service within the house is less important, and particularly because the possibility of building a number of wings will give light and air to various rooms in various different arrangements. But in the house where space must be saved for reasons of economy, certain typical arrangements of the interior have been found to be the most desirable for the usual family, living as our present civilization causes them to live. In ordinary out-of-town houses, general schemes like the following are common. (Compare the ground floor plans of the houses in the estate plans given.)

Entered from the front door may be the entrance hall which, in the formal and axial type of house, often runs through the house to a door on the other side. From this hall there will be stairs to the floor above. Opening off the front hall are the living room, reception room, library, billiard room, or whatever may be the rooms of this kind, in name and use, that the living of the family requires, and the dining room, which is connected with the kitchen by the butler's pantry.

Entered from the back door will be the back entry from which the back stairs give access to the upper part of the house and to the servants' bedrooms. Opening off the back entry are the kitchen and perhaps the laundry and the servants' dining room. The back hall and the front hall should usually be directly connected. The arrangement of the servants' quarters upstairs should be independent of the rest of the rooms on this floor, but the back hall upstairs should connect with the front hall upstairs. In this way the various front rooms branch off the front hall, and the service rooms are related similarly to the rear hall, so that all traffic may be provided for in the halls, without disturbing the particular use of any room by devoting it in part to traffic into another room.

Effect of Interior Arrangements on House Form

Now this or any other chosen interior arrangement will have its effect on the exterior form of the house. Since the living room, the reception room, the dining room, and the billiard room should open off the entrance hall, and since, for the sake of light, a house can hardly contain in its thickness more than two rooms and a hall, it is frequently desirable that the entrance hall should have rooms on both sides of it, which means that except in unusually large houses the front door is usually more or less in the middle of one of the long sides. If the scheme of the house and surroundings is axial, the center line of the front turn or forecourt may be the center line also of the main hall, and be continued, on the other side of the house, as the main axis of the gardens or of whatever other formal development may be arranged there. Where the house is built on the "H" or "E" plan, the forecourt may be included, wholly or in part, between the wings, as a house terrace or a small garden might be, on the other side of the house.

Where, as is so frequently the case in modern houses, the life of the family goes on primarily in the living room, which is much the

largest room in the house, the light for this room and the views from its windows may well be first considered, and the shape and arrangement of the house modified to make them as good as possible.

The service quarters should have ample light and air, but they should not block the light or the view from the living portions of the house. This brings about the common arrangement of the service quarters as an "L," projecting usually from the northeast corner of the house. If the house is large enough, and the style of architecture permits, this "L" may run off at an angle of forty-five degrees. It may thus relate diagonally to the main mass of the house, just as the outdoor service areas, and the planting or other screens of the main view, often will be found to relate, as we shall see. However, it will often be impossible to avoid having the service wing make one boundary of some desirable view, or of some area which is used by the owner and not by the servants. Under these circumstances it will usually be possible to have only high windows on the side of the service wing which lies next to the important view, or otherwise to make the service wing as inconspicuous and as little intrusive as possible. It is often better to use the area thus partly inclosed by the service wing as a forecourt, or in some such way devote it to access and traffic, rather than to use it for any purpose which devotes it for considerable lengths of time to purposes of rest or leisurely enjoyment.

In designing a house the architect usually first considers what size and shape and arrangement of rooms will be necessary to provide the client, inside of the amount of money which the client can spend for his house, with the living conveniences which he desires, suited to the climate of the region and the particular exposure of the house. Often the practical solution of this problem will produce a house of a certain general shape and size, irrespective of any other consideration, and perhaps the shape and size so determined must be accepted, no matter what other considerations there may be. There are, however, a number of other factors which ought distinctly to motive the choice of the shape of the house. The house is only one unit among many in the design, even though it is usually the dominant unit. And in the choice of its form, the architect should consider the whole composition of which the house forms a part, which includes, also, the trees around

it, the approaches, the shape of the ground on which it is set. The choice of the form of the house may be made because it is obviously desirable in the large composition of the whole estate to put a turreted and aspiring house on the top of the steep hill which has been chosen, or perhaps, on the other hand, to put a long, low house in the flat plain which is occupied by the estate which is being designed.

House Form as Affected by Choice of Style

Very important in its effect on the shape of the house is the choice of the architectural style. To be sure, if the economic necessities of the house produce, inevitably, a long, low, rambling form, then the architect can choose only among such styles as express themselves in forms of that kind; and similarly, if the house, for economic reasons, works out to be small on plan, but tall and narrow, the style will be fixed, or at any rate restricted, by this consideration. Then, too, there will be the accepted style of the region, local traditions, local materials, and so on, which, in the absence of good reasons to the contrary, ought at least to be seriously considered in choosing the style of a new house. Again, and fundamentally important, there will be the taste of the client, and particularly the mode of life which he is to live — how the house is to be used: whether it is to be often occupied by gay parties of guests, or whether it is to be the quiet abode of some studious person. So the choice of style may be to a considerable extent motived by the similarity of the life of the owner of the new house to the life of the people who created the particular style which is being considered.

Another factor in determining the form of the house will always be the taste of the designer. This, at times, has been given too free a rein; some designers seem to feel that the work of designing a house is purely a matter of the expression of their own personality, as the work of painting a picture or making a statue might be. The better attitude in that regard is, as we have already seen, that planning a house or laying out an estate is interpreting the personality of the client, bearing in mind, however, that the designer probably has an artistic ability superior to that of the client, and that the designer is responsible for making the result a work of art.

Location and Orientation of House

The location and orientation of the house will be determined primarily by the factors of access, light, view, topography, and the deter-

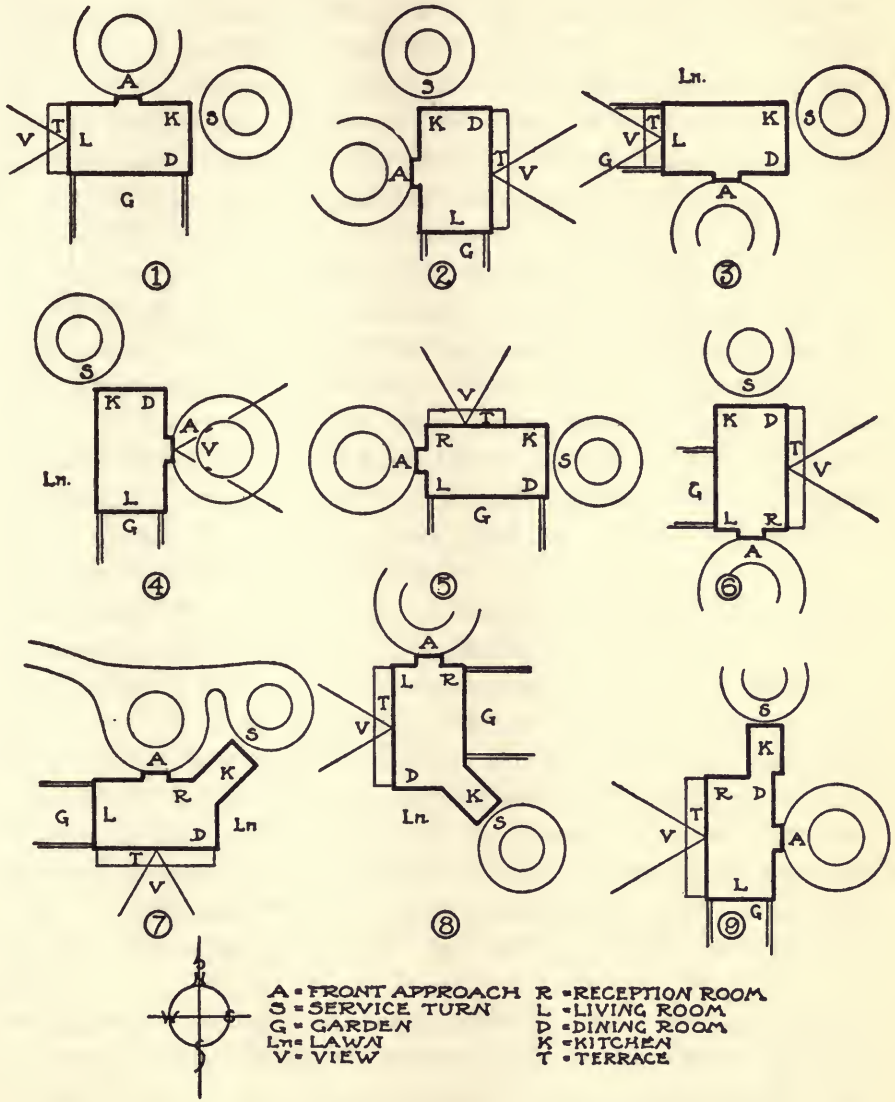
mined units into which the surroundings of the house are to be divided. (See Drawing XXIX, opposite.)

The traffic from the street to the living portion of the house should be sufficiently direct; and where it can be arranged without too great sacrifice, the pleasure traffic and the service traffic should be separated. In any case, the roads should not unpleasantly break up the areas seen from the living rooms of the house. The service traffic should be reasonably direct to the service quarters, and should be as little conspicuous as possible from the house and from all portions of the grounds. All this should be considered before the house location and orientation is decided, for a small change in house location may make or mar a good road arrangement.

In the northern parts of the United States, the winters are long and severe enough to make a southern aspect desirable at that season. And in the greatest heat of the summer, when the sun is to be avoided rather than sought, a great many families are away from their winter homes. The west wind is usually a fair-weather wind, and a view into the sunset is to be desired. Odors from the kitchen should not be carried by the wind to the rest of the house. The wind most likely to do this is the fair-weather wind of summer, when the windows are open, — that is, the south and west wind. So the kitchen should preferably not lie on the western side of the house. A southern and western aspect is usually preferable for any main room. The living room, being the most important, will probably be given this exposure. Of course the direction and kind of the prevailing winds is different in different regions, and this will much modify, or perhaps even reverse, the relative desirability of different exposures in different cases. The dining room should face the east, at least if also used as a breakfast room. If there is a separate breakfast room, the dining room may get the southern and western sun, and the breakfast room, alone, the eastern sun. The kitchen, though it is likely to be relegated to the northeastern corner, should have light and air on two sides. An ideally planned house has no part of it, except some closets, without an outside window.

The outlook from all the principal rooms of the house should be as well composed, and as free from incongruous elements as may be. The best view into the grounds or to a distant landscape should probably be

DIAGRAMS SHOWING SOME RELATIONS
OF THE OUT-OF-TOWN HOUSE
AND ITS IMMEDIATE SURROUNDINGS.



A = FRONT APPROACH
S = SERVICE TURN
G = GARDEN
Ln = LAWN
V = VIEW
R = RECEPTION ROOM
L = LIVING ROOM
D = DINING ROOM
K = KITCHEN
T = TERRACE

DRAWING XXIX

given to the living room, and as we have seen, it should be, if possible, into the south and west. Service arrangements and service approaches should not be visible from the main rooms. Unpleasant objects in or beyond the property should be screened. A test of the perfection with which these conditions have been met within an estate would be to determine how small a sector of the whole property, viewed from the house, is occupied by service approaches, service arrangements of any kind, or objects unpleasant to look at; and how large a sector is presented as an unspoiled view from the windows of the living portions of the house. Evidently, this requirement suggests a service approach running in a radial direction to the service yard, which, in turn, lies radially outside the service portion of the house. From the point of view of the appearance of the house from the grounds, there are a number of considerations which may prove important in their effect on the location and orientation of the house. This may be affected by the appearance of the house across the main lawn from the street, which may require parallelism of the house to the street line where the house is near the street. Perhaps it may be affected by the formal relations of the house to the gardens, terraces, etc., which, in turn, may be fixed in location by the topographic limitations.

Where the house is surrounded by a number of units, like a house terrace, a forecourt, and a garden, the problem of location is one of locating, not the house alone, but the mass composed of the house with its appurtenances. If they are formal, the mass is less flexible, and the problem in this regard more difficult. In any case, the questions of access, orientation, and view as they concern the house, and the questions of organization of the whole estate are so bound up together that each aspect of the problem reacts on all other aspects, and we have no solution until we have a solution which meets all these exigencies at once, or makes the best possible compromise among them.

In the relation of the house and its appurtenances to the topography there are naturally three general types of house location: hilltop, hillside, and valley or plain. Each type of location has its effect on the type of arrangement of the house and surroundings; each has its own merits and its own defects.

A hilltop site is chosen, usually, for the view. It is often difficult of access. It is exposed to the weather, to the cold, to the sun. There is likely to be difficulty as to water supply. There may be lack of space for the units surrounding the house. There may be a lack of near and intimate views. There may be even a lack of foreground for the very important views for which the site was chosen, making the view merely a panorama, — a great expanse, but not a pictorial composition. And from a hilltop site it is difficult to screen out any neighboring ugly thing, if such there be: the house dominates the whole landscape, from it we see what there is to be seen whether it is good or bad. A hilltop site, therefore, at least a site on a narrow hilltop, is likely to sacrifice in some degree a number of the desirable attributes of a home site for the sake of view and openness and perhaps coolness, and for the importance of the house as an object in the landscape.

A hillside site, typical of the Italian villa, gives both shelter and view, although the view is on one side only. If the hillside be steep, there is, again, lack of space for the immediate surroundings of the house. Such a site is likely to produce an axial arrangement, with the main axis across the contours, — that is, running up and down the hill; and with the long dimension of the house parallel to the contours. The orientation, in this case, will be fixed by the location; consequently we must have in mind what the inevitable orientation will be when we choose our location, and this orientation will determine the sun, view, and breeze which are afforded the house. The terraces which are very likely to be called for on such a site may run down from the house, or up from the house, or perhaps both. The more effective arrangement commonly is that running down from the house, because, seen from a distance, the terraces make an architectural base for the house, and their level surfaces can be seen to some extent from the house terrace. On hillside sites, or on sites on the top of a slope, the house may be built in the form of an "L" or three sides of a square, or it may consist of a main mass with two wings at forty-five degrees; the convex side fitting the convex contours of the hillside, and the concave shielding the entrance turn or forecourt. The forecourt would thus lie between the house and the hill, and in steep situations its wall opposite the house might be a retaining wall, holding the slope of the hill.

The obvious difficulties of lack of room on a steep hillside, and the restriction of the view on the uphill side of the house, make the ideal situation for a house which dominates the hillside the military crest of the hill, or at least the outer edge of some considerable flat area on the side of the hill. This gives all the advantages of view and openness on the downhill side, and gives also all the advantages of room for the development of the immediate surroundings of the house on the flat area on the upper side of the house.

In the valley or plain location the choice of form and arrangement of the house and grounds is not so definitely forced upon the designer by the topography. The location and orientation of the house will be determined more by the other factors which we have already discussed, particularly perhaps by the best disposition of the whole estate into its different functional areas, and the relation of the house to them. But even on approximately flat topography the designer will often seize upon some slight difference of elevation, perhaps to give the house greater dominance, at any rate to differentiate one area from another and to produce something more than merely a flat plan relation between the building and the rest of the estate.

The House Terrace

The house terrace forms in the design an architectural base for the mass of the house, and in use it gives a small outdoor area, roofed or unroofed, next the house, to which some of the functions of the house can be transferred in pleasant weather. Naturally, it is related formally to the house, and almost always it is treated as a part of the architectural design of the house, being frequently paved and decorated with architectural objects, or with foliage architecturally treated. The house terrace often serves to bring to the door of the house lines of traffic which could not come directly to these entrances without intruding on the view. As the length is parallel to the side of the house and at right angles to the view, the terrace is usually narrow, because it must be in scale with the house, and because otherwise its outer edge would probably interrupt the view from the lower windows. The house terrace may however be included between two projecting wings of the house, and may even assume the form of a partially inclosed court, rather than that of a narrow place of overlook. The transition between the house terrace and the grounds will be a question of design which

cannot be decided except in the individual case. The architectural lines of the house come down unbroken to the surface of the terrace. The terrace may serve in the design, as we have said, purely as an architectural base for the house, and it may be desirable that the strong lines of the terrace come down similarly to the ground at its base. But it is often the case that the outer line of the house terrace makes a less sharp contrast than this with the surrounding grounds. Its retaining wall or bank may be masked by planting, and its form thus blended into the surrounding landscape forms, making a transition between the house and its setting without unduly screening the architectural façade of the house itself.

The Forecourt

The walled forecourt carries out the architectural lines of the house in a lower and broader mass into the surrounding design. It definitely conceals and segregates the turn of the front entrance drive before the front door, and often serves an important function in the scheme by presenting in its entrance gate an object to which the road may approach with an effect of definite design, without the road necessarily being related in its direction to the façade of the house or to the front door. Like the house terrace, the forecourt may in part be included between two projecting wings of the house, the end façades of the wings facing on the forecourt or outside of it according to its relative size. The possibilities in this regard will be limited by the minimum size of the forecourt, which must be at least sixty feet in diameter if large automobiles are to turn in it conveniently. A walled forecourt, being a self-contained unit, is commonly not well placed when between the house and a good view or an open lawn. The forecourt seems more reasonable and effective when heavy woods enframe it, or when its wall opposite the house is a retaining wall, dominated by a higher level of ground. The forecourt should be so connected by road with the garage and stable that the vehicles for the use of the owner can get to it readily, but it should be so arranged that service traffic does not go through it on the way to the service portion of the house. Its function is that of a traffic entrance in any case, and therefore it should usually not be treated as a garden, nor primarily as a place of rest or leisure. Its decoration, in architecture and planting, should be rather such as can be readily

grasped in a short time, without particularly inviting to long enjoyment of minor interests.

The Garden as a Unit of the Estate

The garden is ideally a place inclosed, protected, restful, a private area for the leisurely enjoyment of outdoor beauty.* It has, therefore, some functions similar to some of those fulfilled by the house, and is in effect often an outdoor living room.

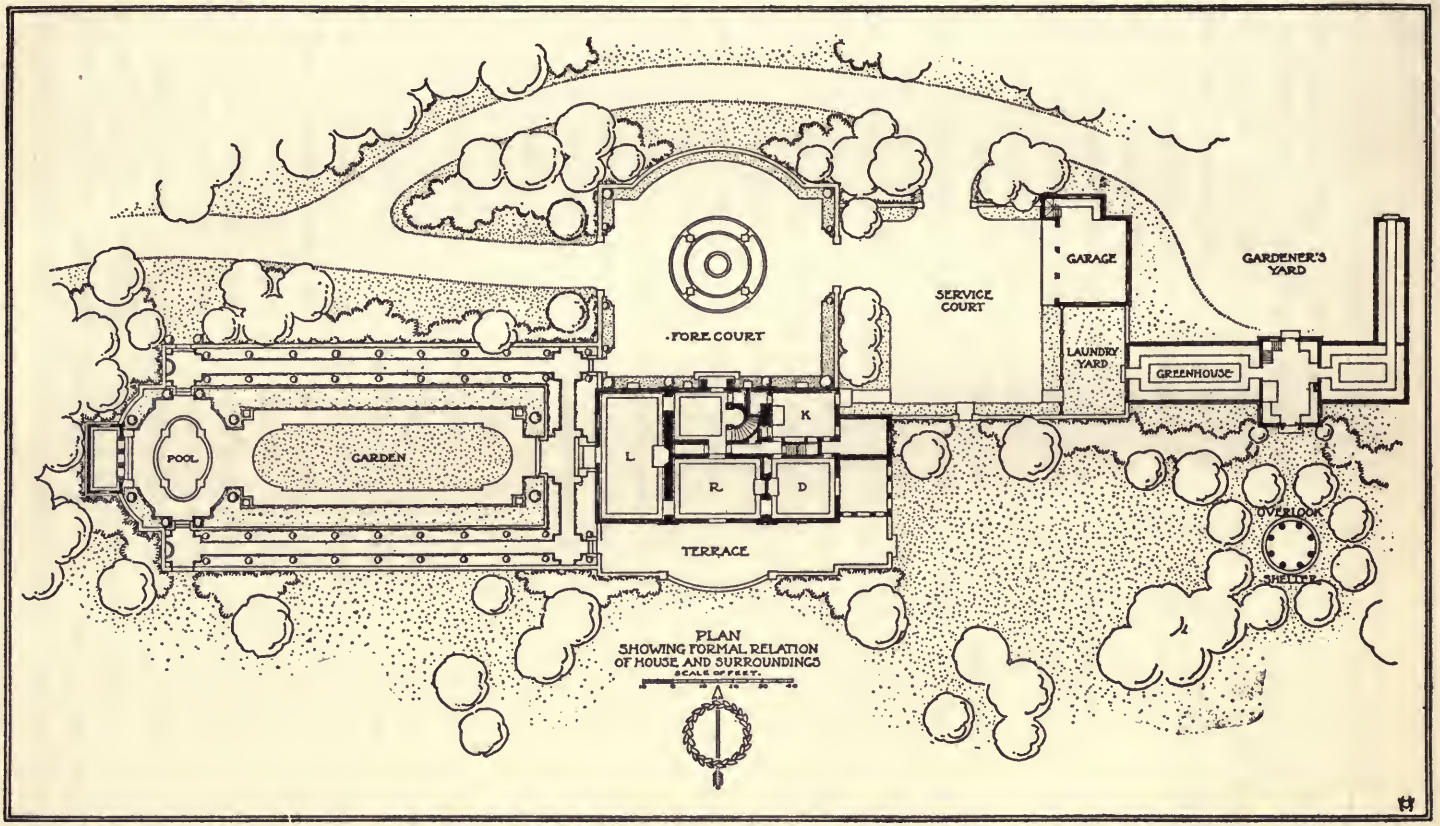
The garden most commonly is located so that it is visible from the house. It is possible, where a house relates directly to an informal design, to have the garden, though visible from the house, consist of an informal arrangement of turf, flowers, shrubbery, and trees. More usually, the closeness and dominance of the house is likely to require a formal treatment of the garden and its formal relation to the house, and this consideration is strengthened by the practical fact that fences, shelters, and flower beds are more readily made and managed in formal shapes. On the smaller estates, where the architectural mass of the house is inevitably dominant and visible from all parts of the grounds, this is especially true, but this relation will often be desirable in the case of larger estates as well, not only from the point of view of design in grouping the various formal units together, making the house and its immediate surroundings a dominant unity, but from the point of view of use in grouping together those units which have similar functions, and in arranging the most finely wrought and interesting units of the outdoor design so that they shall be visible and easily accessible from the place where the owners spend most of their time, — the house and especially the living room.

If the garden is to be a place inclosed, private, offering many small interests in itself, it is not easy to make it serve also as the best foreground for a distant view. A flower-decorated terrace may readily fulfill this function, but a garden so used is likely to lose some effect of intimacy. Whether the gain is worth the sacrifice, only a study of the particular case can determine. For similar reasons a garden is commonly not bettered by being made to serve purposes of access for any considerable traffic, particularly for persons other than the owners. The treatment of a forecourt as a flower garden is seldom the best arrangement possible. The garden may lie beyond the forecourt,

* Cf. p. 234.

and be accessible through it, if no better location offers, but the interposition of public traffic between house and garden is not in itself desirable. When visible from the house, then, the garden should commonly be neither on the approach side nor on the view side, but rather forming a composition of its own, visible and accessible from some one room, or axial arrangement of rooms, in the house, and backed by some inclosing mass. If this relation is formal, it may occur in one or both of two ways. The mass of the garden may relate to the mass of the garden-façade of the house, either by the continuation of the lines of the house to inclose the garden, or simply by a general symmetrical arrangement of the house and garden on the same axis without any marking or accenting of this axis. Where the garden has axial mass relation with the house façade, the very simple relation of form obtained by prolonging the lines of the sides of the house as the boundaries of the garden is apt to be obvious and monotonous. It is commonly better to have the garden wider than the house, and to relate the outer lines of the garden to house terraces, porches, or similar extensions of the house. On the other hand, the main axis of the garden may be strongly marked and may terminate on a strongly marked feature in the house without having the mass of the house symmetrical about this axis. In some cases, too, a satisfactory formal relation between house and garden may be obtained by treating both as portions of one formal scheme, to the main axis of which the garden bears no very close relation, — for instance, the house may terminate a long upper terrace and the garden may lie below and to one side of this terrace.

In our climate, where a house is to be used throughout the year, the winter appearance of the garden visible from the house becomes very important, and this militates against the use, in such a garden, of statuary or of plants which must be protected in winter, and makes unwise the exclusive use of plants which disappear entirely or present only withered stalks in the winter. Such a garden should contain enough elements beautiful in winter to make a complete and sufficiently furnished design, at that season. This means the use of architectural features, of trees and shrubs, and particularly of evergreens. It is quite possible to mark the dominant points in a design with evergreens and archi-


GARAGE
GARDENER'S YARD
SERVICE COURT
FORE COURT
LAUNDRY YARD
GREENHOUSE
POOL
GARDEN
K
L
R.
D
TERRACE
OVERLOOK
SHELTER
PLAN
SHOWING FORMAL RELATION
OF HOUSE AND SURROUNDINGS
SCALE OF FEET.

DRAWING XXX



tectural features, things beautiful in winter, so that in summer the interest centers on the flowers enframed and formalized by the more permanent material, and in the winter there is a formal design in evergreens and vases and snow. Where the house is used in summer only, or where the garden is not visible from the house and therefore need not be seen when not at its best, the design can of course be made solely for summer effect.

Exceptionally, a formally designed garden may bear no relation to the house, but in that case neither should be seen from the other and the garden should form a satisfactory unit of and by itself.

Where the house is not rigidly symmetrical in shape and where perhaps the shape of the area of land that may be devoted to a garden does not lend itself to formal development, or where, as a matter of choice of style of design, no formal units are considered desirable in the scheme except the buildings, the garden may be quite informal in shape, but still definitely related to the house and to certain important views from the house. The garden may consist of an irregular open area of turf enframed by shrubs and trees, decorated by flower borders, and related to the house perhaps by the fact that the façade of the house forms in effect one wall of the garden inclosure, and probably also by being so arranged that the most important view into the garden, that which traverses its longest dimension and terminates upon its most interesting feature, is commanded perhaps from the living room of the house. It would be purely a matter of definition where such an area ceased to be a garden and could more properly be called a flower-decorated forest glade or a flower-decorated bay in the lawn. (See the informal areas in Drawings XXXII, XXXI, and XXX, in that order.)

Pleasure Buildings

Pleasure buildings on a private estate may serve almost as many different purposes as the owner finds different pleasures in his outdoor possessions. They give shelter and shade. They form interesting points to look at, and to walk towards, in the various compositions into which the whole estate falls. They give comfortable resting places from which to enjoy a view over the surrounding country, or the color of an adjacent garden, or perhaps the sight of a game of tennis. They provide facilities in connection with such outdoor activities as boating and swimming. Often they form a part of the architectural scheme

which includes the house and its appurtenances, the house terrace and a formally arranged garden. A pergola or vine arbor may run out from the side of the house, dominating and bounding one side of the garden, and terminating in a shelter, which on one side looks back into the inclosed peacefulness of the garden and on the other overlooks a distant view. Or a shelter may form the dominant feature at the end of the garden away from the house, terminating the main view into the garden, and echoing the architectural effect of the house. Or in a scheme which contains long vistas or enframed formal views, the terminal feature may be a structure which may serve also other purposes of pleasure or use.

These shelters, or pavilions, or gazebos, or summer-houses, or whatever we please to call them, will be fixed as to their minimum size by their absolute scale; that is, by their relation to the size of a man. They must be large enough to give a reasonable height for a man to stand in and a reasonable space for several people to sit about in.

When one of these structures forms a part of the wall of a garden which also relates to a house, we have the question of relative scale between the house and the shelter. If the garden is small and the shelter is in scale with it, it is obvious that there is danger of having the little shelter overpowered by the size of the house. In other words, there will come a point, as we reduce the size of our scheme, where we shall be obliged to choose as an object to decorate our inclosure of the garden, or terminate a vista, not a shelter, but an arch or doorway or a hooded seat, or something of that kind, which can be small without being out of scale, and without being apparently in hopeless competition with the mass of the house. It is generally true that there will be certain kinds of things which we can use as dominant objects or as something to attract attention, if our scheme is of a certain size; but if our scheme is of considerably different size, then the range of objects we must choose for the same purpose will be different. We shall find ourselves dealing in one case with sundials, gazing globes, tables, seats; in another case with arched openings, hooded seats, small flights of steps; and in a larger scale with shelters, gazebos, pergolas, garden temples, and such structures of relatively greater importance.

House Service Areas

There will be also on any estate certain structures which serve an economic and not primarily an esthetic purpose, — for instance, the various house service arrangements, the laundry yard, and the service court. For convenience they must be near the service portion of the house. Since their economic purpose is not one to which attention should be much directed, any considerable decoration of them would be decoration misapplied. They should, therefore, be at least subordinated and probably screened. This screen frequently takes the form of a fence or wall or formal hedge, and then these areas may, in a sense, form an outlying part of the formal scheme of the house, — outdoor adjuncts to its service portion. The areas themselves should not be visible from the living rooms. Their screens should not interrupt views from such rooms, though they may be visible, and may often form part of the enframement of some views from the important rooms of the house. Under these circumstances the screens are more usually formed of shrubbery and trees, or masked by planting which relates in its form to the view rather than to the service area, so that the service area is not only concealed but no attention is drawn to its existence.

Estate Service Buildings and Areas

In larger estates the various necessary service buildings and areas commonly form one or more groups separate from the house and its surroundings. Often the garage and sometimes the stables open on the house service court, and consequently form a part of the house group. In this case the architectural style of the house will be echoed, if not exactly carried out, in the garage and other structures. In the large country estate, these service buildings may be at some distance from the house, and so need not be looked at near at hand unless one is interested to do so, but their main mass, at least the silhouette of their roofs, will probably still tell as a part of the composition, including the house, and it must be designed to tell harmoniously.

When the entrance to a large estate is far from the main residence, there may be a gate-lodge, partly to supervise the traffic which uses the road, but more to make it evident from the street that the entrance leads to a private place of some importance. The lodge and the entrance gate may be all part of one structure, similar in architectural style to the house. More commonly, in this country, the lodge is a separate building, near the gate, used as a dwelling for the gardener or

other employé, and designed for this use rather than as a piece of architectural decoration of the entrance.

When the country estate is run to some extent as a farm, the necessary buildings will be grouped together, probably well away from the house, and in relation to the farm land, for practical reasons. Still, these buildings are after all usually not primarily business ventures, but serve in a way an esthetic end, that is, they serve to add to the completeness of the scheme in the owner's mind. On account of this the form of these buildings may be largely modified for esthetic effect. And since they are properly not so dominant as the house, their form may to a greater degree be fixed by and subordinated to the landscape, though their style would still normally be congruous with that of the house. Many picturesque and interesting arrangements are possible. The precedents of many of these are English, but recently a considerable number of elaborate and decorative farm building groups, which are valuable data for the designer, have been constructed in this country, suited more directly to our local conditions.*

The most common arrangement of the buildings is in a group surrounding a court or a series of courts; the largest and most dominant mass of building often being that of the hay-barn, with the structures that house the water-tank, and perhaps the silo, serving as towers to strengthen the corners of the composition.

The Greenhouse

The greenhouse serves two distinct purposes. It is used to start plants for subsequent use in the garden, and to raise plants for display, either in the greenhouse or in the house. It is, therefore, in both uses, a sort of artificially tropical part of the grounds. Architecturally, it is a particularly difficult object to treat. To best perform its own functions it should be composed as nearly as possible all of glass. If so made, it is not solid enough, not architectural enough, not sufficiently like any other units in the scheme, to compose well with these other structures. Sometimes there is little that can be done but to minimize and endure this incongruity. Often however the potting shed, which is not a glass structure, may be made to bear its part in the architectural composition, while the greenhouse, entered through it and thus related to the decorative part of the scheme, is con-

* See *Modern Farm Buildings*, by Alfred Hopkins. (See REFERENCES.)

cealed behind it and so kept from appearing incongruous in the general design. The greenhouse should be accessible from a service drive and from the gardens. The potting shed, or the main entrance to the greenhouse, may well be accessible from the house through some decorative part of the grounds, without forcing the pleasure traffic to cross any service area or service drive.

Reserve and Vegetable Gardens

The outdoor service arrangements pertaining to the upkeep of the grounds usually comprise the reserve garden and gardener's yard, the hotbeds and cold frames, and compost yard. These things, not being primarily decorative, are often put into the least conspicuous place available, consistent with their use. The reserve garden and the vegetable garden, however, may be used as decorative features in the design almost as the main flower garden might be used. There are a good many vegetables which are in themselves decorative. For instance, chives make an excellent border along a path, and an interesting tropical effect can be produced with rhubarb. An arrangement which is often desirable is to continue, from the flower garden through the vegetable and reserve gardens, a path or a series of paths, possibly treated with rose arches, at any rate bordered with flowers which are used for decoration in the house afterwards, or which perhaps are moved into the main flower garden to replace some other plants which have gone out of bloom. These flower borders may be backed with hedges which segregate the walk from the less attractive parts of the vegetable garden, into which you can go through gates or arches or gaps in the hedges at certain places. Or the paths need not be so segregated at all; the vegetable garden may simply be cut up into pleasant and useful areas by these paths. The paths themselves may be decorative, as we have said, and the vegetable garden, if it be well kept up so that there is a neat arrangement of growing plants in well-kept ground, will be to a considerable extent a beautiful thing in itself without any further decoration.

The reserve garden should be close to the flower garden and should be closely related to the greenhouse and the compost yard. The hotbeds and cold frames would commonly be in the reserve garden. Of course, all the outdoor accessories tributary to the garden might be in one area, called a reserve garden, but it is commonly better to have

a separate gardener's yard containing the compost yard and space for the various activities intermediate between the greenhouse, hotbeds, cold frames, and the garden.

Tennis Courts and Areas for Other Recreations

Besides all these service areas, there are some areas for recreation, which on account of the definite shape and character necessary for their use are not always easy to handle as objects in an esthetic design.* The tennis court is the most common and the most difficult of these. A turf court with its necessary backstops may form a bay in a lawn, with the planting on each side concealing the backstops; or with its tennis shelter it may form the end of a formal vista, or with architectural treatment of the backstops it may of itself make a unit in a formal design. A dirt court is still more difficult to use as a unit in an esthetic design where the surface of the ground is elsewhere turf or flowers, and it is commonly better to segregate such a court entirely from the rest of the scheme.

Croquet lawns and bowling greens, if not used by very expert players, can form merely a part of an open lawn. Where a rectilinear boundary is necessary for the play, they may form a part of some terrace scheme, and indeed, the term "bowling green" is often applied to a reasonably level, formal, inclosed grass area on which, perhaps, bowls were never intended to be played.

Outdoor swimming pools may assume any form from formal and architectural treatment of water with surrounding walls, fountains, terraces, to the naturalistic treatment of the enlargement of a brook to make a sufficient sheet of water to swim in.

Garden theaters,† which were used in a good many instances by the Italians of the Renaissance, are being constructed occasionally in this time and country. They may be worked into a design partly at least in order to give a special character to an area which otherwise might be difficult to make of enough importance, but in a community with much means or much "local talent," such a theater might be very frequently used, for plays, or music, or addresses. These theaters usually have a stage, raised by a retaining wall some three feet above the area in which

* See footnote on p. 274.

† See *Italian Garden Theaters*, by Henry V. Hubbard, in *Landscape Architecture*, Jan. 1914, v. 4, p. 53–65, with illustrations, and subsequent articles on the same subject in other periodicals by several other writers.

some of the audience sit, and enframed and backed by a series of hedges or similar plantings which serve as a proscenium arch and as stage scenery concealing the spaces on each side in which the players wait for their cues, and having openings between them through which the characters come upon the stage. The place for the audience may simply be an inclosed flat area on which chairs are set when the performance is given, or it may consist of one or more low terraces designed either to be used as seats or in a similar way to receive temporary seats when the theater is used. (See Tailpiece on p. 61.)

Larger areas for sports and games are sometimes found on country estates; polo fields, racetracks, and so on; but they have no particular relation to the typical design of the estate, and are really separate units in themselves. It is hardly desirable to discuss them in detail here.

The Open Lawn

As we said when we began the discussion of the private estate, one of the desires of the owner will almost certainly be for openness, for expanse, for a sense of freedom. It is well in most designs, therefore, to arrange to devote at least one large simple unit to this purpose. Sometimes this sense of expanse may be obtained by a view over several small units, perhaps a view the beauty of which consists in a distant skyline, or mountain, or river, not owned nor in any way controlled by the owner of the estate. But where no such distant view is possible, it will still be desirable to have some one open area as large as the circumstances allow; something to produce the effect of space. Usually this area is simply treated; its boundaries are trees and shrubs, its floor is turf, and on smaller places it usually goes by the name of the "lawn." Since the designer endeavors to make use of all the space at his command the lawn is often informal in order to throw into this one open space all the possible accessible area. Since its fundamental purpose is to suggest openness and freedom, a naturalistic treatment, at least an informal treatment, is likely to be chosen, and this is particularly the fact since in many cases the lawn is treated as an extension towards the observer of a distant outside view * which in the nature of things in the country is naturalistic.

* Cf. Repton's "Appropriation," — making the estate seem larger than it is by merging its boundaries in those of the surrounding country and repeating within

The grass surface is usually best when concave, so that it rises towards its enframing walls, and thus gives some sequential sweep from floor to wall.* This same form has a further advantage of giving a base on which the surrounding planting can stand much more effectively than would be the case if the ground sloped down towards the enframing plantation.

Even when this lawn is small, the study of its enframement in smaller detail, — breaking it into points and bays, making the points strong, heavy, dark, making the bays lighter in texture, and perhaps decorated with flowers, — will add needed interest without destroying the first essential, the single unity of the whole lawn.

Tree-shaded Areas

In direct contrast to the open expanse of sunny lawn, some area of close-grown trees to furnish shade is almost an essential. It may be a formal planting of trees related closely to the house, perhaps terminating one end of an overlook terrace and containing a shelter, it may be a mass of trees related to a formal composition like the Italian *bosco*, or the French *bosquet*, or more often it may be a naturalistic grove crowning a little hilltop or embowering a valley, and owing its individuality and particular effect to an intentional development of the natural character of its site. Then, too, such an area will have a character of its own through the character of its trees: it may be a pine grove or an oak grove, each of which gives a distinctive effect in sight, in sound, and, in the case of the pine grove at least, in smell.

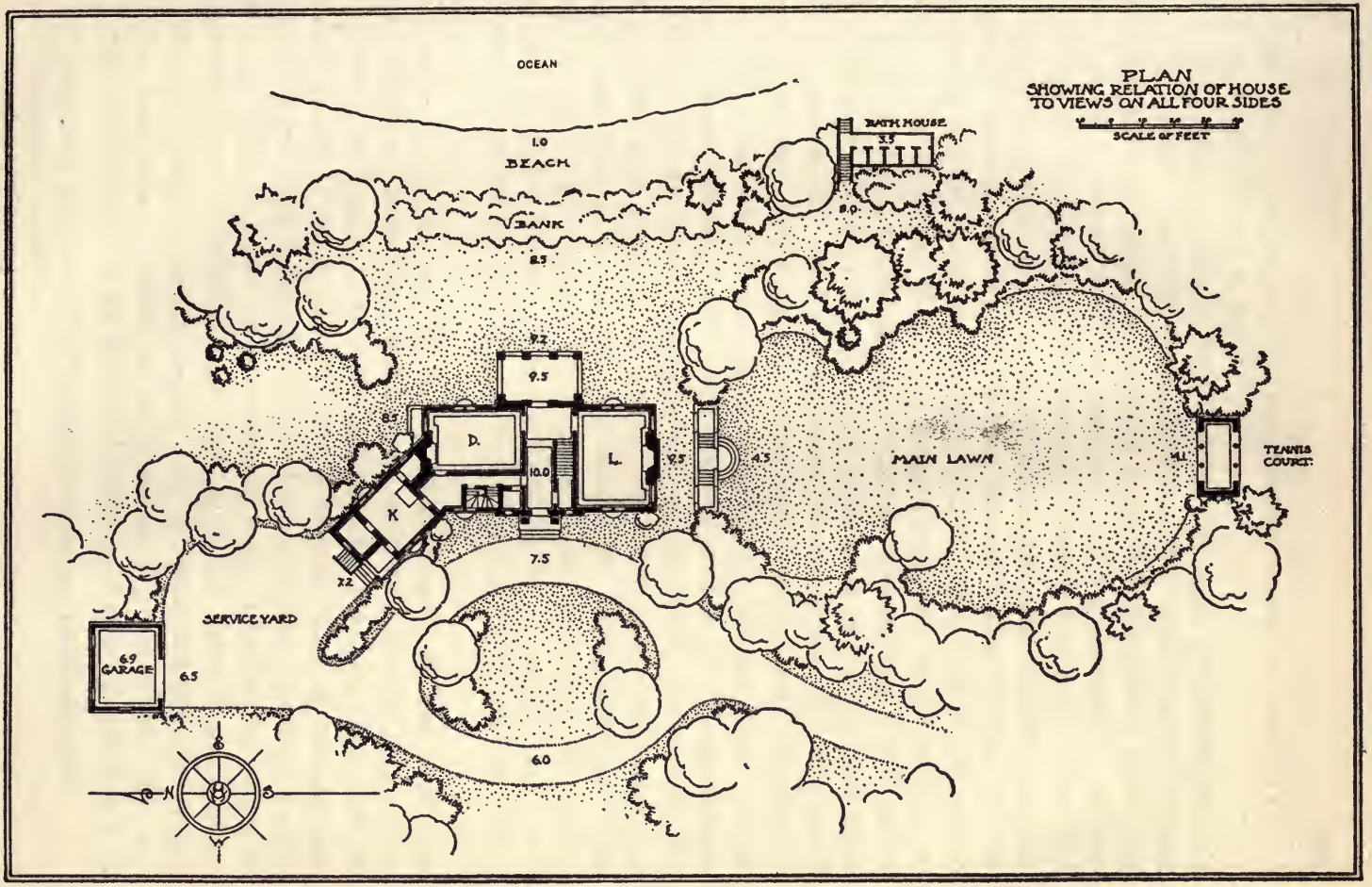
Natural Character Units

On the smaller estate, the shapes and sizes of the separate units of the design may be all determined by the designer almost entirely from the point of view of the economical apportionment of the whole area and the fitness of each subordinate part to its purpose; but if a larger estate is fortunate enough to contain a number of natural landscape units, the designer will usually do his best to adapt these to his necessary uses without spoiling their natural character, to enhance and protect these characters,† and present their effects at their full worth. For the freedom which these natural forms suggest is usually one of

the estate planting found in the adjoining scenery. See his *Theory and Practice*, Chapter IX.

* Cf. Chapter IX, p. 183.

† See Chapter V.



DRAWING XXXI



the things which a man is primarily seeking when he goes into the country to build himself a home.*

Access The first requirement of a road † is that it shall be convenient for traffic. Its surface must be suitable, its width sufficient, its radius of curvature of turns ample for the use of the vehicles which pass over it; but a road is not of itself particularly a thing of beauty. More- *Approach Roads* over if its surface is fitted to modern traffic requirements, it is too rigid and definite, too self-assertive to be wholly congruous with the naturalistic style or natural character which is the expression of most of the larger estates in this country; further, it is expensive to build and to maintain. The problem of the landscape architect in providing access by road in an estate is commonly to make the road as direct and as useful as possible, but at the same time to make it as little conspicuous as may be, and as little an interruption of the landscape through which it runs. Since the road needs both shade and concealment, it usually has trees along its course. In a good non-formal scheme these trees, as we have seen, are usually so grouped that the side of the foliage masses away from the road relates in shape not to the road, but to the adjacent informal open areas of the estate. As these open areas enframed by the foliage masses are commonly related to those façades of the house from which the important views are seen, it comes about that unless there is some reason to the contrary the roads usually approach the house, concealed by the foliage, in a diagonal direction towards a corner.

In a large estate the approach road should seem to lead with reasonable directness from the public street to the house, or if it be indirect, there should seem to be a sufficient reason for this. It is seldom desirable to make a road very circuitous for the sake of making the estate seem larger, and although at times it may be well to divert a road considerably from its more direct course in order to afford to any one passing over it a particularly good view, still this may be easily overdone, because on a private estate the view is better enjoyed by people afoot who have more leisure to contemplate it. In short, the approach road should afford as many pleasing outlooks as possible and

* Cf. the section in Chapter IV, The Modern American Landscape Style.

† Cf. Chapter X, p. 218.

should be pleasantly and completely fitted to the topography, and should give a flattering impression of the estate and of the house at first glance; but usually for none of these considerations should a very much greater length of road be built, because the road is not itself a desirable object in the landscape, and adding to its length may well spoil more beauty than it creates.

As we have said, where it can be avoided, a road should not intrude upon the open naturalistic views from the house. Where the road must cross such a view, it is better to have it cross approximately at right angles to the axis of the view so that it shall offer the minimum surface to the sight, and very often the road may be entirely concealed in an undulation of the surface of the ground. It is usually better to have the approach road rise as it nears the house, that the house may have sufficient dominance in the composition. If the house lies upon a side hill, it may be both necessary and esthetically effective to have the road approach it from above, but in this case it can be made evident that there is still lower land beyond the house. The front turn itself, however, should pitch away from the house both for ease of drainage and for appearance' sake. If the road approaches the house from below or approximately on a level, it is likely to be unpleasant to have the portion of the road nearest the house pitch down into the front turn. The first view of the house will be ineffective if it is dwarfed by an intervening rise in the road, and in any case it is likely to be annoying to be required to go up a hill for no purpose except at once to descend to the objective point.

It is always theoretically desirable not to allow service traffic to use the road that approaches the living portion of the house, but in many cases this would entail so great an additional road construction as to be practically inadvisable. (Compare Drawings XXX and XXXII.) If both kinds of traffic use the same road for a part of the way from the public highway to the house, the continuity of direction should follow the main road when the service road branches off from it, and the service road should commonly be narrower than the main approach, so that there can be no possible question which is the more important. This separation of the two roads should if possible take place before the service traffic becomes visible from the living portion of the house; at

worst, the service traffic might use the farther side of the front turn, thence going on to its own service turn in relation to the service entrance. Where the garage opens upon the service turn, it will be necessary to have some reasonably direct automobile traffic connection between the service turn and the front turn, but this should if possible be managed without opening the view from one to the other. Where the front turn and the service turn are inclosed in courts in a more formal scheme in English fashion, a gateway giving direct access from one to the other is common, and need not be bad if it be arranged so that the view through it from the forecourt falls on some pleasantly designed portion of the farther side of the service court.

On the smaller estate, or in any case where the house lies near the public highway, the approach road may be more difficult to handle in relation to the main views from the house. It may enter near one side of the property and run diagonally towards one corner of the house or by one end of it to an entrance turn at the side or possibly at the rear; or it may enter near one front corner, sweep close against the front of the house and go out again at the other front corner of the property, being to some extent concealed from the front windows by lying so close beneath them, and probably being treated, as far as may be, as a decorative border of a symmetrical open plot lying axially in front of the house. (See Drawing XXXVII, after p. 356.) Or,—and this is an especially desirable arrangement where the house lies close to the public street, but the view from the house into or beyond the street is not to be preserved,—the main carriage entrance may be directly from the street into a forecourt, a separate service entrance connecting the service wing with the street and leaving uninterrupted all other views from the house.

Paths

On the private estate, in informal and naturalistic designs, paths * are to some extent open to the same objections which apply to roads, but to a much less degree, because the path can be kept better in scale with its surroundings, it can be more readily concealed and subordinated to the topography, and its surface can be made not particularly conspicuous or incongruous with the other elements in the scheme. In formal designs, the paths are of course a common and valuable part in the composition.

* Cf. Chapter X, p. 218.

In a large estate where the house is set at a considerable distance from the highway, it often happens that no special provision for foot traffic is made, since the road serves this purpose well enough, and the wheel traffic is not so frequent as to be dangerous for pedestrians. If there is a separate footpath for access to the house, purely for the purpose of segregating the two lines of traffic, it may exceptionally be desirable to run it parallel to the road, but usually the approach path may run a more direct course than the approach road (see again Drawing XXXVII), either crossing inconspicuously an open area which the road must avoid for appearance' sake, or surmounting by a steep gradient or a flight of steps a slope too abrupt for the road. As with the road, it is seldom pleasing to make the approach path go noticeably out of its course for the sake of offering any beauties by the way. If a path is needed to an especially good point of view, it would be better to make a separate path for this purpose than to impose a constant burden upon foot traffic, some of it hurried, between street and house. Service traffic is of course particularly difficult to force out of its way except by the interposition of considerable obstacles. It is important to know what will be the natural lines of foot traffic among the various service buildings and between these buildings and the house, and particularly between the street and the service entrance to the house, the line which will be used by those delivering the great bulk of small purchases of all kinds. Especially when the house is near the street it is necessary to provide direct service access from the street by a footpath, since almost all deliveries will be made in this way, and any cross-cutting, by traffic of this kind, of areas intended for private enjoyment is likely to be particularly annoying.

Design of the Whole Estate

As we have said, in the beginning of the Chapter, the arrangement of the various elements of the estate, in their best relations esthetic and economic, in any given design, should be the physical realization of the desires of the owner, modified by the limitations of the site. It is evident that this realization will be and ought to be different in each individual case. The best design will be that which makes all its elements subserve its purposes with the least possible amount of incongruous or wasted result. Such a design is possible only where the ideal

to be served and the limitations of the site and materials have been clearly kept in mind throughout.

Choice of Site for an Estate

This decision as to the possible adaptation between circumstances and ideals is the decision which must first be made in those cases where various alternative sites are being considered for an estate. Here the landscape architect may be of great service to his client by helping the client to determine, more definitely than he could do alone, what actually are his essential requirements which must be permanently satisfied by any place which he chooses, and what are the ways in which these essential requirements may be met. There are certain economic requirements which must be met by any piece of land chosen, — healthfulness, water supply, a certain minimum of room and accessibility, and so on; and then there are others which may vary according to the client's desires. For instance, if natural freedom and some suggestion of wildness are very desirable things to a client, he might choose either an open hillside pasture or a piece of partly open low-lying pine forest as his country property; but if a distant view seemed also very desirable to him, the second piece of land would probably be eliminated from consideration. If there is any wide range of choice among a number of alternatives, it usually facilitates a decision categorically to determine the essential requirements, to arrange them roughly in order of importance, and to judge the various pieces of ground under consideration according to the completeness with which they meet these requirements. Once having chosen a piece of ground, however, it is well if possible to be motived by its characteristics and to seek to produce only those effects which can be produced well under the circumstances. To revert to our former example, it would probably be unwise to choose the open pasture and proceed to transform it into a grove, or to choose the grove and try to transform it into a meadow.

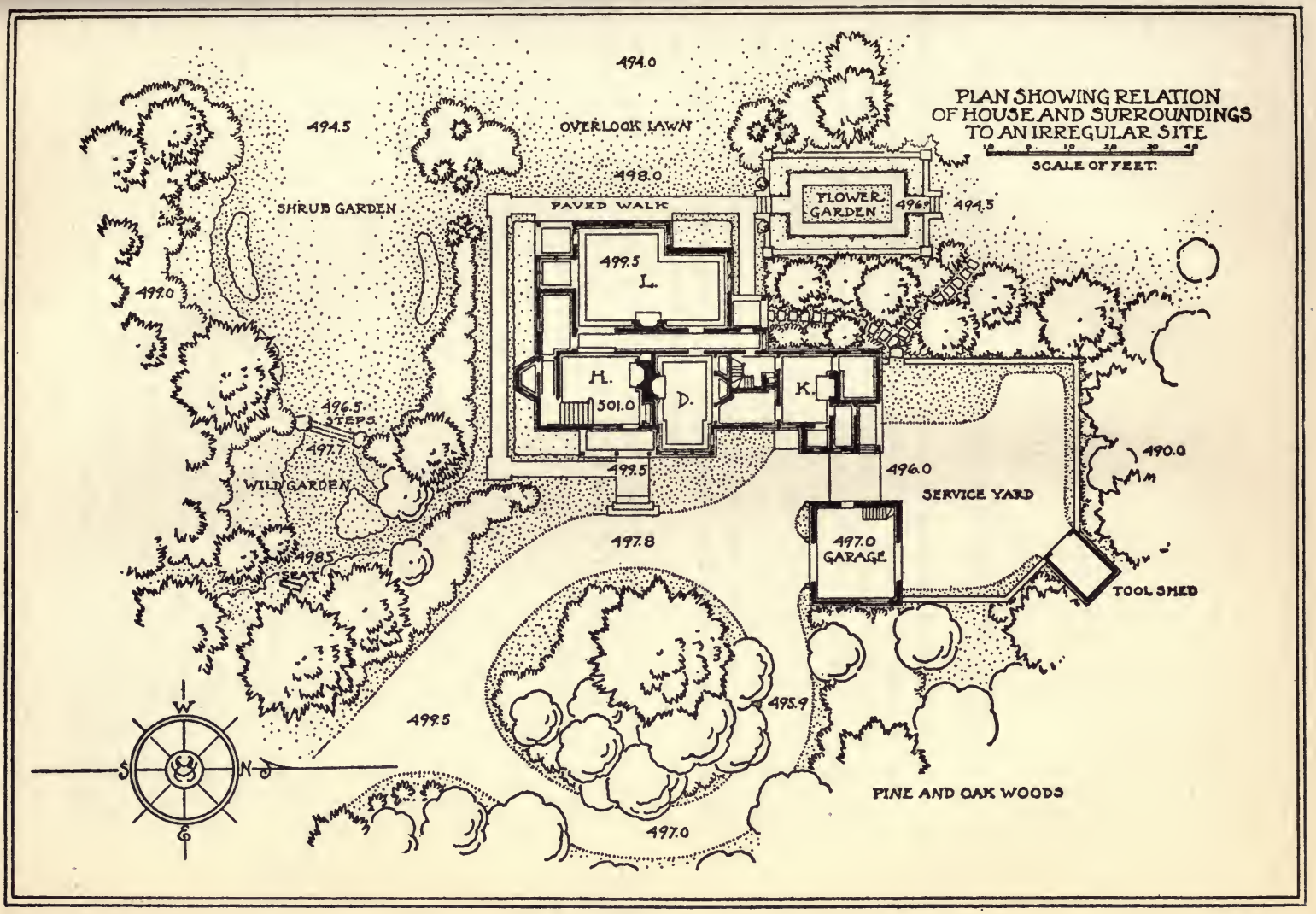
The question of expenditure for purchase, construction, and upkeep will lie back of all these decisions. Whether the client's property shall be a large country estate, a suburban estate, or a house lot will usually depend primarily upon his purse; but this choice once made, whether unwillingly or not, should be adhered to consistently like the choice of any effect. The designer should keep his treatment in scale with his problem, not attempting to make a country estate out

of a house lot, nor to give to a man in moderate circumstances a scheme requiring great annual upkeep expense. A simple scheme well constructed and well kept up is better than an ambitious scheme, ill constructed and run to seed, and better than a complicated scheme crowded into too small an area.

Apportionment of Estate Area into the Units Required

The apportioning of the area of an estate into separate parts for its separate uses, esthetic and economic, is again largely a matter of the client's desires and the topographic possibilities. But it should be remembered that some effects may be produced sufficiently well by the skillful use of a small space, whereas other effects are absolutely dependent on extent. A flower garden may be very small and still quite sufficient; a lawn is likely to be better the broader its expanse. Some areas in an estate have certain necessary sizes and certain typical shapes, like road turns and tennis courts.* Others have formal shapes but not definitely determined sizes, as for instance, a formally arranged garden. In a good design these necessarily predetermined areas are provided in their proper relations without thereby leaving portions of the property unusable because of awkward shape or inconvenient location. Fortunately there are some elements in the design of an estate, like groves of trees or, at a smaller scale, plantations of shrubs, which are not fixed as to size and do not need to have any definable relation between one side and another. They naturally come to serve as boundary masses at the edge of the estate or to lie between other units of the design. An ingenious designer should usually be able to make them serve this purpose and take up discrepancies between the boundaries of one unit and another, still not wasting an area which might be better employed.

* Diagrams of areas for sports are given in Taylor's *Landscape Construction Notes*. (See REFERENCES.)



DRAWING XXXII



PART III

LAND SUBDIVISION FOR RESIDENTIAL PURPOSES

Land subdivision as a business venture — ITEMS OF EXPENSE TO THE DEVELOPER — SALABLE ASSETS PRODUCED BY DEVELOPMENT — Room — Proximity to town — Convenience — Social desirability — Amenity — Beauty — "LOW-COST" AND "HIGH-COST" DEVELOPMENTS — PROFESSIONAL ADVICE IN LAND SUBDIVISION — PROCEDURE IN DESIGN — CHOICE OF TYPE OF DEVELOPMENT IN RELATION TO DEVELOPMENT OF CITY — THE STREET SYSTEM: its relation to the city plan — Alleys — Characteristic effects of street systems — Streets in relation to topography — Sub-surface utilities — Street widths — Roadways and planting strips — Sidewalks — LOTS: sizes — Width and depth — Shape — Orientation — RESERVED AREAS — RESTRICTIONS — Districting.

Land Subdivision as a Business Venture

The subdivision and development of land for residential purposes is different from most of the problems with which the landscape architect has to do, because the final success of the design is usually tested by the pecuniary value of the finished result. In private estate design, in park design, many things are done which, while the designer knows them to be worth their cost, cannot be demonstrated to produce a definite profit in dollars and cents. In land subdivision work, however, except when it is a part of some philanthropic movement, every cent spent by the owner for acquisition and development must show a fair profit when the property is again sold.

Items of Expense to the Developer

Land subdivision for residential purposes is a business venture which consists in the development of land which is not intensively used, — perhaps "waste land," woodland, or farm, — providing for proper access, lighting, water supply, sewerage, and so on, or at least some of these conveniences, and selling what remains of the land, after that portion turned over to the public has been set apart, in small areas at a profit. In doing this, the selling price of the land must in one way or another be charged with the cost of the following items of the develop-

ment or of as many of them as are incurred in the particular case: the value of the unimproved land, street and sidewalk construction, tree and other planting, sanitary sewers, storm sewers, telephone and electric light wires, water pipes, gas pipes, street lighting, street signs, and such other structures as the particular situation may make necessary. All these conveniences may not be provided when the land is sold. If any which are necessary are not provided, the selling price of the land will be by so much reduced. The selling price of the land must also include the actual cost of putting it upon the market, covering cost of all professional services concerned with this process, — those of the real estate expert, landscape architect, engineer, and so on, — the interest on the various expenditures made in developing the land from the time when they are incurred to the time when the land benefited by them is sold, and taxes on unsold land up to the time when the last piece of land is disposed of. Obviously there will be less land to be sold than was at first bought, since a considerable portion must be set aside and ultimately given to the city in the form of streets or perhaps other public areas, and the total cost of the land so set apart must be included in the original cost of unimproved land to be covered by the selling price of the land actually sold. Finally, the whole transaction should show, in addition to the original value of the land and the total cost of developing it and marketing it which we have just discussed, a profit to the owner for his risk in undertaking the development. Usually of course the owner looks also for a speculative profit, repaying him perhaps very amply for his ability to put into the real estate market something much in demand.

Salable Assets Produced by Development

In return for these various expenditures the persons developing the land have the following valuable things for sale in different degrees according to the case, — things not always separable in the actual case, and interdependent in various ways, but for the sake of discussion, capable of being talked of separately. First, there is for sale room, — space in which a man can build a house, construct a garden or make whatever desirable use of the ground he pleases. If the scale of living of the people to whom the land is intended to be sold requires a certain amount of space, then this will fix the size of the separate lots. Granted however that space enough is given in this way, the smaller the lots

Room

are, the more per square foot will be received for the land sold as lots. Second, there will be for sale proximity to town. Other things being equal it is an advantage to every one to be able to get rapidly from his dwelling to the business or down-town districts of the city. Plainly the smaller the lots are and consequently the more of them there are, the more people are provided with proximity to town, and thus, so far as this factor goes, the higher can be the total selling price of the land. Third, there is for sale convenience, that is, ease of access to the lots by the local roads, convenience of shape of lot, convenient relation of the slope of the surface of the lot, if there be any, to its probable use. In attaining this convenience probably some extra expense in road construction will be incurred, and perhaps fewer lots will be produced than might otherwise be obtained. Fourth, there is for sale social desirability, perhaps the most important and least predictable of all the characteristics that make land salable. The desirability of the adjoining land will usually be a principal factor, but the size of the lots and the restrictions will have considerable influence. The kind of selling campaign and the social status of the first few people who buy lots will also tend to determine the social desirability of the whole property. Fifth, there is amenity, that is mutual unobnoxiousness, the avoidance of anything in the construction, development, or use of the buildings and grounds of one property detrimental to its neighbor. Large lots will evidently make this more easy, but restrictions as to size, appearance, and cost of buildings and their location and use will do much towards amenity even with small lots. And then there will be for sale beauty. The decision as to what kind of beauty is to be produced will be one of the fundamental decisions to be made before the scheme can be at all decided on. If there exists considerable natural beauty of pleasant hillside and great trees, and if the lots may be made large enough so that the natural surface of the ground may be to a great extent preserved, then there may be chosen a development of winding roads, of informal planting, of lots so arranged that the lot units and the landscape units coincide as far as may be possible, and the house locations may be so taken as to do the minimum of damage to the natural landscape. If this kind of beauty does not naturally exist, it may nevertheless be chosen as a type to be approximated in the new develop-

Proximity to Town

Convenience

Social Desirability

Amenity

Beauty

ment, if the lots are large enough to admit of it. If, however, the lots are small, the houses necessarily close together and dominant in the scheme and close to the street so that no broad naturalistic effect is possible, then the beauty to be sought must be of quite another kind, — a beauty of harmonious but diversified houses, of tree-shaded streets, with pleasant curves or with pleasantly broken straights, a beauty consisting largely in a general air of decency and well being. This must be provided for in the design, but can be maintained only by properly enforced restrictions and particularly by a proper community self-respect among the lot owners.

If a land subdivision scheme be large, so that it creates its own atmosphere, so to speak, and is judged by its own appearance and its own worth, there can be little doubt in any one's mind that all these considerations, including that of beauty, will have their recognizable effect upon the selling price of the land. In smaller schemes this is not always at once so obvious, since an ill-arranged or ugly scheme in a good neighborhood may still be salable; but it is really capitalizing the good arrangement and the beauty of its neighbors, and from the point of view of the community at large its additional profits are more than offset by the damage to the surrounding property.

"Low-cost" and "High-cost" Developments

It is evident that the relative importance of these various considerations will be different to the prospective purchaser according to his wealth and social status and consequent habits of life. From this, there has arisen in the ordinary parlance of real estate men a classification of residential developments into three kinds: "low-cost," "medium-cost," and "high-cost." No sharp line can be drawn between these classes, although the terms low-cost and high-cost each stand for a sufficiently definite central idea. A low-cost development, insisting on those characteristics which mean low purchase price and low annual expenditure, must reduce the facilities which it provides to the minimum consistent with permanent health, efficiency, and self-respect. The low-cost development has in the past had a bad name because, for the sake of cheapness, these various facilities have been reduced below this minimum, most strikingly perhaps on the side of amenity and beauty. There are very many cases, however, where by working out a large enough scheme, beauty and amenity to a very considerable degree may

be included in the excellences of the property put within the reach of the ordinary working-man.

The low-cost development will be practicable only in those places where the bread-winners can get easily and cheaply to their work. Where the land is at all expensive, the low-cost development will in general be characterized by the attempt to house as many people as possible per square foot of lot. It will therefore have separate dwellings, each covering the maximum proportion of its lot, or semi-detached or two-family houses, or in the final case of economy of room, apartment houses or flats, or houses in block. Poor people may be housed on expensive land, as in our in-town tenement houses where they sacrifice everything but absolute necessities to proximity to the city. This same concentration of population may of course take place in higher cost developments where the land is very expensive, as in the in-town apartment houses or dwellings-in-blocks of people of means. The type of low-cost development in which the landscape architect is likely to be particularly interested, however, is that in which the land is sufficiently cheap to allow of ample light and air and some beauty of building relation and planting. With the decentralization of industry, these results may be obtained without requiring of the bread-winning members of the family any considerable travel between home and work.*

A high-cost development is one in which the purchasers can afford to pay not only for absolute essentials, but for such convenience, amenity, and beauty as the land can offer in excess of these. Such a development may be far from town, since its owners have the leisure and the money for the longer journey, or it may be near town, in which case the greater cost appears not as a transportation charge but as first cost of land. In either case, such a development would be characterized by larger lots, wider spacing of houses, giving over of ample land for convenience and beauty of streets, and perhaps by restrictions which compel the expenditure of a relatively large amount of money upon the houses, and so to a considerable extent fix the social status of the purchasers. Where the land is very expensive, however, the high-cost development may be obliged to make the same sort of sacrifices that the low-cost

* See the list and illustrations of pre-war low-cost housing developments given in John Nolen's *More Houses for Bridgeport*, 1916. See also his *New Towns for Old*, 1927, and Cf. *The New Day in Housing*, by L. H. Pink, 1928.

development does, until it comes again to the in-town development of apartment houses or houses in block, the essential difference from the low-cost development on similar land lying in the number of people housed per square foot of ground area. High-cost suburban land development * plainly offers to the landscape architect as an artist greater opportunities than does the low-cost development, since more money may be spent on amenity and beauty. If the landscape architect looks upon his work from the point of view of social betterment, however, his greater opportunity for public service lies in the low-cost development.

Professional Advice in Land Subdivision

The landscape architect is of service to those interested in the development of land for residential purposes primarily through his knowledge of the various kinds of outdoor beauty and utility and of the means whereby they can be economically produced; but any landscape architect should learn through practice enough about the effect which is produced on land values by different types of development to make his advice and coöperation worth seeking also in questions of adapting means to ends on the financial side. In the larger land subdivision schemes in this country, it is common for two kinds of professional advisers to coöperate on the general design: — the real estate man who knows what the public expects in residential land, what the public will pay, what other land is being sold in competition, and how a selling campaign may be managed; and another professional adviser, often a landscape architect, who has the technical skill and the experience to produce from the land the maximum of salable utility and beauty at the least cost.

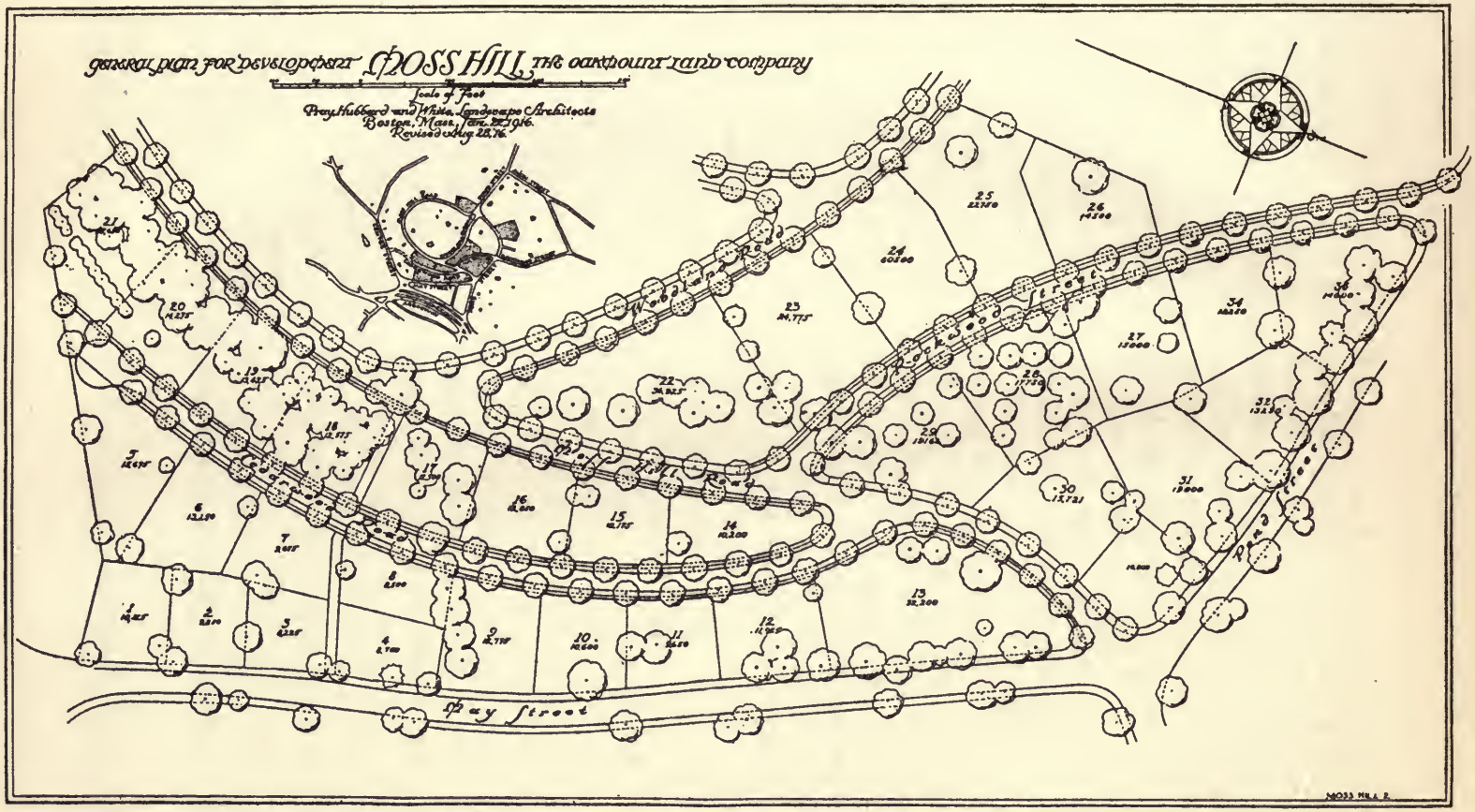
Procedure in Design

It is evident that in determining on the design all the general considerations which we have mentioned must be taken into account, and the best design will not be produced until the most effective compromise has been reached among their conflicting claims.

Choice of Type of Development in Relation to Development of City

The first decision should be to determine, as far as is possible with the data at hand, what part the land is to play in its relation to the future city. A great deal of harm has been done to our cities by unregulated development of private land for local use only, to the detriment of any possible convenient general scheme. This is true not only

* For instance, see *Book of Pictures of Roland Park, Baltimore, Md.*, 1911.



LAND SUBDIVISION SCHEME FOR A HILLSIDE TRACT

of traffic relations but also of the use of the land for residential, commercial, or manufacturing purposes. The intermingling of widely different types of use is likely to be inefficient from the point of view of any one type or from the point of view of all together. The spread of manufacturing or commercial activities into residential districts, or the spread of a lower class of residential development into an area occupied by a higher class, destroys a great deal of present value and is likely to find the ground unsuited by its design to its new use. Recognition of the advantages to the whole community secured through control by the public, under the police power, of the uses of private property has brought about our zoning ordinances and our regulations governing the subdivision of unplatted land. Nearly all our largest cities and many small towns have by zoning undertaken the guidance of future uses of land, and a considerable number have major street plans into which the lay-out of new subdivisions must be adjusted.* Where such regulations exist, they are first to be consulted by the land developer; where they do not, he must make the best prophecy he can himself as to the future use of the land and proceed accordingly. The developer must then consider what is to be the social and financial status of his future purchasers, roughly, that is, the price they are willing to pay for a building lot. If the land subdivision scheme is large, it may be different in different parts in this regard, but in any one small neighborhood widely different residential types will not mix and the cheaper will drive out the more expensive. Having made these decisions, and taking into account the original cost of the land per square foot, it will be possible for the land developer to determine roughly the selling price per square foot and the range of lot sizes which would be most desirable in the subdivision. With this in mind the road locations are to be studied and so chosen that with the least amount of road and the greatest traffic convenience, the land may be all divided into lots of the chosen range of size. Evidently the size of a lot as well as the topographic and traffic considerations will motive the determination of the distance from one road to the next. Within certain limits the shape of the lot may be varied to give the

* Cf. discussion of municipal regulations controlling land subdivision, p. 293–294.

required area without disturbing the road scheme, but the use to which the lots are to be put and the local customs as to the frontage and shape of the lots will fix limits in regard to their proportions which it will probably not be economical to disregard.

The Street System: its Relation to the City Plan

The streets should be so located that they connect with the existing streets of the surrounding territory and make the land subdivision a functional part of the whole city traffic plan. Our more progressive cities now "accept" the routes of the main thoroughfares and the more important secondary streets in advance of development, as the city-planning commission has decided they should be in their broader relations, and no privately planned streets are accepted unless they are in accordance with the "city map." Where no city map exists, if it is evident that in the future some important artery of traffic would have its best location through the property to be developed, then it should be very seriously considered whether the owners of the property, acting by themselves or in coöperation with neighboring land-owners, and if possible officially through the city, might not at once establish such a street, plan it in line and gradient appropriately for its through traffic, and arrange the size and shape of the lots upon it and the plan of the minor streets connecting with it, with the same considerations in view. If no such main artery of traffic is to be predicted, and a quiet residential neighborhood is being planned, it is often desirable so to arrange the roads that, while the property is accessible, through traffic is discouraged, and the roadways, bearing only their local traffic, will be less noisy and may be made less broad than otherwise would be the case.* Where some of the surrounding property is of a better class of development than other parts, it may be a great advantage to arrange the roads so that the new development is related to the best of the neighboring land and so to some extent partakes of its value.

Alleys

In some residential subdivisions alleys for service traffic are introduced, giving access to the backs of the lots. So long as the desirability of the two different uses for the two sets of roads continues, this may be a satisfactory arrangement, but such permanence is very problematical, and the narrower service roads are not likely to be satis-

* See Chapters X and XI in C. M. Robinson's *City Planning, with Special Reference to the Planning of Streets and Lots,* 1916. (See REFERENCES.)

factory for any other use, if the land is later cut into smaller lots, facing upon both sets of roads.

Characteristic Effects of Street Systems

The different types of street systems will produce characteristically different esthetic effects, which must be considered in relation to the desired character of the development. A curvilinear system fits and expresses variation of topography and will probably appear unmotived unless so conditioned. A gridiron system gives regularity, which may easily become monotony if the buildings are too nearly alike. Much of the effect which the subdivision may have as a whole will be due to the views axially along the streets. A simple system of intersecting straight streets is likely to be ineffective in this regard, as there is no definite end or terminal point to any of the vistas. A system of streets of flowing curves may be similarly indecisive if the streets are many or long. There is likely to be a distinct esthetic advantage, therefore, in a system which provides straight streets of reasonable length giving good axial views of interesting objects, such as churches or other public buildings, or attractive private houses, and the view down the street from the building is an added asset, at least in the case of the private house. Too great interruption of street continuity in this way is a burden upon traffic, but it sometimes happens that an irregular topography may be developed to great advantage in a street system of short straight lines, fitting the topography practically as well as a curved system, and being both cheaper and esthetically more effective.

Streets in Relation to Topography

Where there are any considerable hills, the road should be so laid out upon their slopes as to have the least possible gradient and at the same time the least possible cut and fill. If the slopes are large and simple, this may be done by a gridiron system of roads running diagonally to the contours. If the natural slope is not greater than the possible maximum gradient of the road, the gridiron system may be laid out with one set of roads parallel to the contours and the other at right angles to them. The gridiron system has certain advantages of simplicity in plotting and legally describing the roads and lots, and where the two sets of roads of the gridiron system intersect at right angles to each other, the lots may be entirely rectangular and so as little wasteful of land as possible. On the other hand, where there is any considerable natural beauty of hill and valley and tree, and particularly where the

hills are small and steep and variously sloped, an irregular system of curving roads, taking advantage of the topography, will be not only more appropriate and more beautiful but almost certainly much cheaper. (See Drawing XXXIII, opp. p. 280.)

In any case, the roads should lie as nearly as possible upon the natural surface. Where a road runs along a hillside it should be remembered that it is commonly considered a disadvantage to go down into a lot from the road. The road should therefore, if possible, be kept back from the brows of steeper declivities so that there may be room for houses at the level of the road between the road and the down slope without any great amount of fill. A moderate sinking of the road below the lot is desirable. Any considerable sinking of the road, entailing a steep bank, is expensive in future lot development, particularly in provision for access by automobile. Of course if the roads are far enough apart to give separate lots larger than an acre or so, these considerations of relative elevation have less effect, because they may perhaps be overcome by proper location of private drives and planting.

Sub-surface Utilities

In determining the gradient and location of the roads, it is necessary also to consider the surface drainage of the lots into the road gutters, the drainage of these gutters to the catch basins, and the running of the drainage from these catch basins, either in a separate system or combined with the sewage from the houses, to some point of ultimate disposal or connection with the city system. As these pipes normally run under the roads, it would be an ideal arrangement from this point of view if they might run everywhere with the gradient of the road to where they left the property, thus minimizing the amount of trench-digging or encroachment upon land devoted to lots. The ideal location for telephone and electric light wires in a residential subdivision is in underground conduits, but it is an expensive proceeding to put all wires underground, and often all that can reasonably be done is to put all the wires on poles running along the back lines of the lots, the poles being located to be as little conspicuous as possible, and the private wires running to the backs of the houses, or underground when otherwise they would be especially conspicuous.

Street Widths

In almost all towns and cities there are certain definite requirements as to road width and gradient and construction which must be complied

with before the road can be accepted by the municipality. It has often been the case in the past that a rigid enforcement of the letter of these laws, particularly of some regulations specifying a definite proportion between the width of the traveled way and the total width of the reservation, has imposed an unnecessary burden upon the owners and resulted in a poorer development than the owners would otherwise have constructed.

Roadways and Planting Strips

The width of the public right-of-way from lot-front to lot-front should not be too much diminished, because it gives not only room to traffic, but light, air, and sufficient setting for the buildings. The width of the actual traveled roadway, however, in a street which carries only the local residential traffic of one block, need give at the most only space for one vehicle to stand and two to pass, and often room for two vehicles to pass — sixteen feet — is sufficient for all practical purposes and better than more, if the blocks are short and the street intersections allow of easy turning of automobiles. The rest of the space from front-line to front-line of abutting properties may then contain besides the sidewalks a considerable planting strip between the sidewalks and the road. This planting strip may contain not only trees but perhaps shrubs serving as further decoration and cutting off the noise and dust of the roadways from the adjoining properties. Where there is considerable difference between the level of the road and that of the adjoining land, this difference may be taken up wholly or in part in the planting strip, and the cost of grading of the street and of the private entrance roads may be thereby made much less than if the sidewalks were put everywhere mechanically in the same relation to the crown of the road. If the traveled way must at some future time be increased in width, the planting strip may be at the beginning so graded and the trees so set out that this change may be later made without disturbance of sidewalk or planting.

Sidewalks

The sidewalks are usually better next the property line rather than next the road, both for convenience and economy and for appearance' sake. Like the roads, the sidewalks should be built no wider than the traffic requires. Room for two people to walk abreast or for two people to pass — say, four feet — is enough on a street which has only a few lots abutting upon it. On streets where the foot traffic is very light

one sidewalk only may be constructed, and in rural localities separate paved sidewalks may perhaps be omitted altogether, particularly where the subdivision consists of large properties and the traffic is infrequent and mostly by vehicle. Usually even in such cases, however, it is better to have some safe line for pedestrian traffic. The sidewalk may take the form of an irregular path, sometimes near the road, sometimes near the property line, making its way among trees and over somewhat irregular gradients, an inexpensive and appropriate arrangement persisting until great increase in the traffic requires a more definite construction.

Lot Sizes

As we have seen, the sizes of lots in a land subdivision scheme will be primarily determined by the mode of life and scale of expenditure of the people who are to own them, and they should not vary in size in any one neighborhood so greatly as to make some of them unfit for the use of people of the general class for which the neighborhood is designed. But within these limits some variation of size is not only allowable but desirable. On an irregular topography with curving roads, an attempt to make all lots of the same size will produce some lots of unusual and inconvenient shape. Moreover, the people who come to buy lots do not all require exactly the same thing, and a certain number of lots somewhat larger and somewhat smaller than the general average may perfectly well be sold to advantage before the last of the lots come to be disposed of. Where there is little distinction between one lot and another and few existing trees, the demand for lots of a size different from the average may be met by selling two lots together or even a portion of a lot if the general lot size be large enough. Sometimes this condition is met by having the land divided into strips of a constant depth and a narrow width, for instance fifteen feet, and selling to one purchaser any number of strips over a fixed minimum, perhaps four. Where the lots have been designed so that their boundary lines are placed and their probable house locations chosen in order to preserve some natural beauty, this splitting of lots into small units cannot readily be done.

Lot Width and Depth

The minimum width of a lot will be determined by the average width of such a house as would be built by the average prospective purchaser, and the advisable clearance between house and house for air, light, planting, for entrance roads, or for garages or other service buildings.

The minimum depth of a lot will be the average depth of the predictable house plus such set-back from the street as the restrictions require, plus such depth, behind the house, for service or pleasure as the general habits of the future owners will demand. Local custom is a very strong factor in this matter of depth. In many localities land is sold by the front foot, based on an average depth of perhaps a hundred feet, and any depth greater than a hundred feet will often not greatly add to the possible selling price per front foot.*

Lot Shape

On a flat topography it is usual to have the depth greater than the width, for the obvious reason that thus more lots of a given area may be served by a given length of street, and consequently less street cost charged against each lot. Where the street runs sharply downhill this same arrangement remains the best, as it puts the long dimension of the lots parallel to the contours. On the other hand, where the street is approximately level on a hillside and the lots run sharply up and down from the street, an arrangement of lots with their long dimension parallel to the street is often the best, in spite of the fact that it brings the streets closer together, because otherwise the back portions of long narrow lots would be practically inaccessible and worthless.

The exigencies of topography and consequent irregular street systems often produce blocks which cannot be cut up into rectangular lots. In large lots this may not be a matter of great importance, since the relation of the house to the street line and to the lot line may perfectly well be varied. In small lots, however, an irregular lot shape may produce great inconvenience of access or inconvenience in utilization of the irregular pieces of land left between the house and the boundaries. Irregular shapes cannot always be avoided, but when made, the designer should be sure that they are capable of economical use. There are cases where the topography is varied and irregular, but where nevertheless an economical and efficient scheme of subdivision can be worked

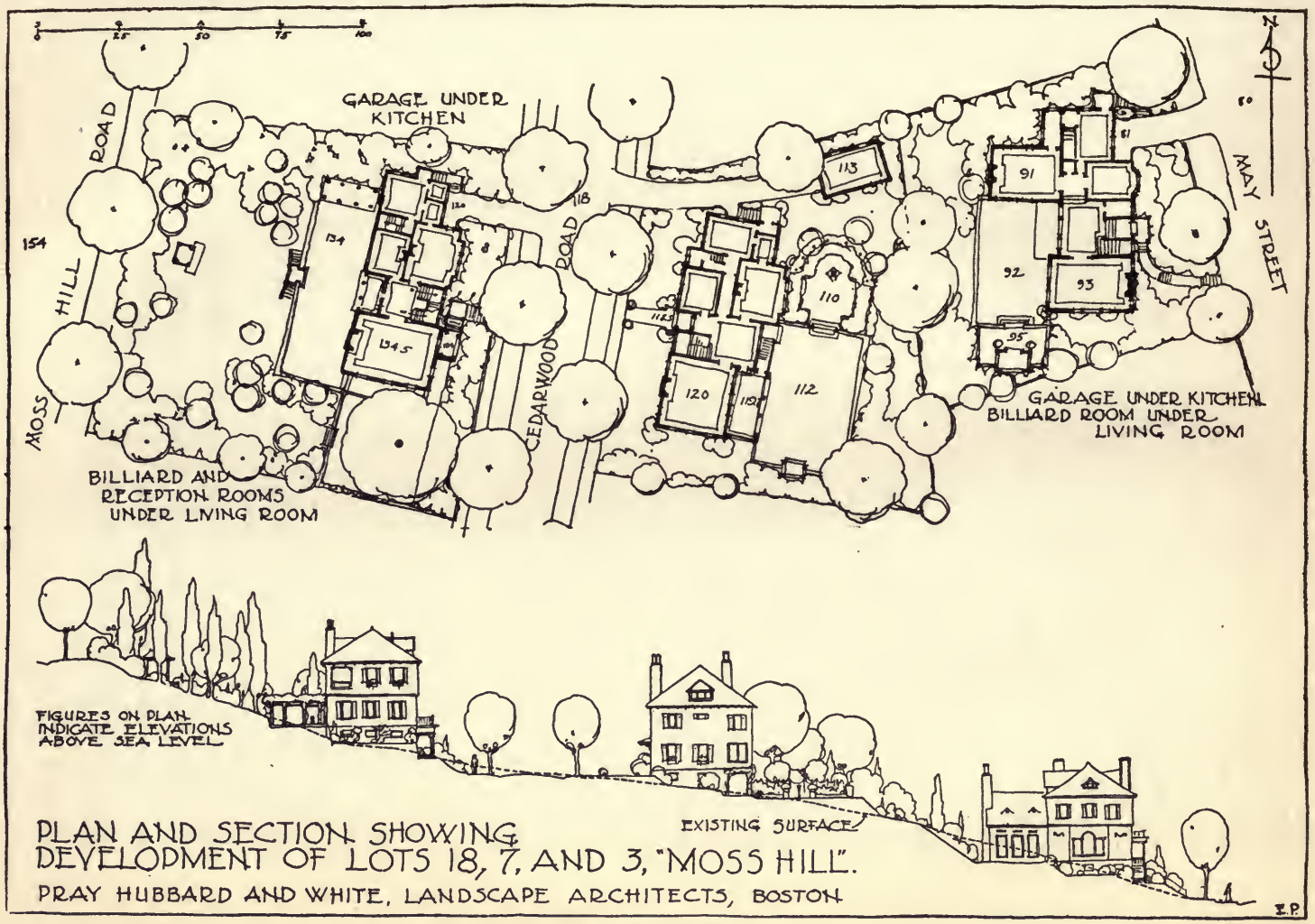
* For a discussion of lot widths and depths see the Proceedings of the National Conference on City Planning for 1915, *Best Methods of Land Subdivision.* (See REFERENCES.) Also see paper before National Conference on Housing by F. L. Olmsted, Jr., *Land Subdivision from the Point of View of a Development Company*, published in Housing Conference Proceedings for 1915; and Report of United States Housing Corporation, Vol. II, 1919. (See REFERENCES.) See also various recent local studies in connection with municipal control of land subdivision.

out by using irregular lots, if it be possible to fix beforehand the approximate house-locations and perhaps the general scheme of development of each lot. This more detailed study raises the cost of the design, and many purchasers are averse to accepting predetermined schemes for the development of their property, but sometimes land can be handled in this way which would entail prohibitive construction expense if developed in any stereotyped fashion. (See Drawing XXXIV, opposite.)

If an irregular block is to be cut up into lots, it should be nowhere so deep between street and nearest street that the two lots lying back to back in this part of the block shall be of too great a depth. To some extent such a difficulty may be minimized by designing lots of greater area in such a place so that they may have greater depth without having undesirable proportions, but there is, as we have seen, a more or less definite limit of size of lot which is likely to be salable in a given location. Special pains should be taken in arranging the lot boundaries to avoid making any angle considerably less than a right angle; and, where it is possible, the boundary lines of each lot should run straight between corners, thus avoiding slight additional angles to complicate the plotting and description of the lot. In subdividing a block into lots, in general the designer will begin by setting off a separate lot in each corner of the block. These corner lots will probably be larger than the average because they are subject to restrictions along both street fronts, and the amount of land available for house site is by so much reduced. The side lines of all the lots will be drawn in each case as far as may be at right angles to the street line, and so spaced in the length of the block that, with a depth in general half the depth of the block at that point, each lot is given a salable size. This must be done of course without producing a frontage on the street too narrow for use or too broad for economy. If these conditions cannot be reasonably met, it will probably be desirable to consider changing the shape of the block even at some additional expense of road construction.

Lot Orientation

Where the lots are small enough so that the location of the house is more or less fixed between the sides of the lot, and where — as is usually the case under such circumstances — it is customary to place the house parallel to the street and as near the street as the restrictions allow,



PLAN AND SECTION SHOWING DEVELOPMENT OF LOTS 18, 7, AND 3, "MOSS HILL".

PRAY HUBBARD AND WHITE, LANDSCAPE ARCHITECTS, BOSTON

DRAWING XXXIV

thereby leaving the maximum private area behind the house, the orientation of the streets and the consequent orientation of the lots and houses become a matter of some importance.* A street running north and south, then, has the disadvantage that the southern rooms of each house — in a northern climate on the whole the desirable rooms — face the neighboring house close at hand instead of enjoying a longer view into the street or into the back property. A staggering of the buildings, one forward against the restriction line, the next back, would largely obviate the difficulty. An east and west street places the southern rooms away from the street in lots on one side and towards the street in lots on the other side. Since our modern houses can be designed to be perfectly efficient with either exposure, and it is merely a matter of personal preference which is the better, this is not a very real difficulty. The shadow of one house upon another is a thing to be studied when the houses are close together. Obviously a building must be very near another to cast a shadow on it from the south at noon when the sun is high, but if it lies to the southeast or the southwest, even if it is a considerable distance away, it may cut off the sunlight, and cut it off from rooms which would otherwise be pleasantest. In general it may be said that so long as it is possible to vary the location of the house upon the lot, and of the rooms within the house, it is usually possible to get sufficient sunlight on a lot of any orientation, provided that the lot is not so small as to be objectionable for other considerations as well.

Reserved Areas

In the larger residential subdivisions it will probably be necessary to provide for other uses of portions of the land than for purposes of residence and access. Certain lots may be set aside for churches, for schoolhouses, for small parks or open spaces, for playgrounds. The presence of the churches and parks will increase the value of the neighboring lots, and that of the whole subdivision as well. Schools and playgrounds, while an asset to the subdivision as a whole, are likely to exert some unfavorable effect on the value of the lots next to them. This must be taken into consideration in choosing the site for any of these provisions for public use. These should be located in proper

* Cf. the discussion of orientation in Raymond Unwin's *Town Planning in Practice*, p. 310 ff.

relation to the residential areas tributary to them, and they often may be arranged for at the junctions of roads with the double advantage of being thus particularly accessible and of making use of a corner which on account of its shape or its surface might have been difficult to use for residential lots. In addition, the church or the schoolhouse may be an important object visually in the general scheme, pleasantly closing a street vista. If there is to be any local shopping in the subdivision, this should be definitely provided for. This may require nothing more than the setting aside of lots at some convenient corner where a grocery store and a drug store may be located. If the subdivision be large enough and sufficiently separated from other residential areas it may form a little town of itself, with a civic center in which buildings for the various public uses may be grouped. This center would lie on the transit line and presumably near the railroad station if there is one.

Small areas may be set aside purely for decorative purposes, for greater picturesqueness or greater amplitude in the street design. The junction of two streets may thus be graced with a planted triangle, or perhaps a more considerable area, at an intersection or a curve in the road, may be dedicated to the embellishment of the whole scheme because it cannot be economically used in lots. Special pieces of land may be set aside for community parks or gardens, serving certain restricted areas only, and planned to be administered by some voluntary association of those land-owners whom they benefit. A little children's playground may be set aside in the center of a block, serving that block only. This too may be planned to be locally administered, but in actual practice this has not been found to work out satisfactorily.* There is a general difficulty in arranging minor local organizations to take care of local areas, because the body of people concerned is constantly changing, and new purchasers of lots do not care to take on such an indefinite coöperative responsibility. It is better, usually, to be able to leave all matters of public administration and upkeep to the town or city authorities when finally the land developers have sold all their lots and withdrawn. Those managing a land subdivision may find it excellent advertising and in the long run a great benefit to turn over a considerable tract of land to a country club on easy

* See article by S. H. Hare in *City Planning*, Oct. 1928, Interior Block Playgrounds in High Class Residential Developments.

terms.* The sacrifice of land salable as lots has been found in a number of cases very much more than offset by the greater value of the remaining lots due to the social and recreational advantage of the presence of the club. If an area of notable natural beauty occurs in the tract, the development company may endeavor to turn this over to the city as a park, in order that it may constitute a permanent attraction to prospective purchasers. A viewpoint commanding a notable prospect may be similarly set aside, being a considerable asset to the development without any great sacrifice of land area. Perhaps space for a public park may be similarly given or sold cheaply to the city, even where no special natural beauty exists, if this comes in proper relation to the whole city plan.

Restrictions

By his planning of roads and lots, by his provision of a certain kind of utility and beauty throughout a subdivision scheme, the land developer may in certain ways determine and stabilize the character of the development, but whatever may be done to the land before its sale in lots, it will still be in the power of the individual lot owners, by what they build and how they use their property, to make or mar the excellence and permanence of the whole undertaking. In practically all subdivisions of any importance, therefore, restrictions of some kind are incorporated in the deed of the lot as a condition of purchase, which attempt to preclude certain uses of the lot detrimental to the neighborhood. And the presence of these restrictions governing all the surrounding lots operates to raise the value of each lot much more than it is reduced by the diminution of its own possible uses caused by the restrictions. The particular uses which are precluded by restrictions should of course differ with the particular type of development to which they are applied. It is very desirable, if the lots are at all small, that the purchaser should be bound not to further subdivide his lot, for this would introduce a different and cheaper type of development which would injure the value of adjacent lots. This same consideration applies to the lots remaining unsold in the hands of the development company. The value of each lot bought is increased by the under-

* In the Kansas City "Country Club District," which Mr. J. C. Nichols has developed, the land for the Country Club was leased to it without rent for twenty-five years.

standing that the neighboring lots will be developed in a similar manner, and if this understanding exists it should commonly be given legal force by a clause in the deed of sale of each lot, or by some other legal recognition by the development company. If certain land is unrestricted, or differently restricted from the rest, it should be plainly so shown on the plan, that the purchaser may not be deceived. Some restriction of the use of the buildings and land is essential to the character of any residential development. If no zoning ordinance is operative, commercial and manufacturing activities, residential use of less desirable type, or anything which is unsanitary, unduly noisy, unsightly, or in any other way a nuisance to the neighborhood should be prohibited. Restrictions of this kind may need to be made elaborate and comprehensive, because upon them the success of the neighborhood largely depends.

A standard may be set for the value and appearance of the houses: each house may be required to cost at least a specified sum or to be constructed in a specified way or designed by certain approved architects, or — and this is common — to have its plans, however obtained, accepted by the development company before the house may be constructed. The size and shape of the house may be restricted: it may be allowed to cover only a certain percentage of the lot area, or to extend across only a certain proportion of the lot frontage, or to be only so many feet or so many stories in height.* The orientation of the building and the elevation of the first floor may be fixed by the restrictions. The position of the house and of other buildings on the lot may be restricted; this is perhaps the commonest restriction of all. The house may be required to be set back a certain number of feet from the street and a certain number of feet from the side lines and sometimes from the back line of the lot. This same restriction may apply to all buildings upon the lot, but often garages and perhaps other small buildings and bay windows and porches on the main house may be allowed to intrude to some extent into the areas restricted against larger structures. Minor structures may have special restrictions of their own. Garages may be prohibited within a certain distance of the

* Even where zoning is operative, such restrictions also are necessary in high-class developments.

street; henhouses may be relegated to the area behind the dwelling or prohibited altogether. Other structures like fences and walls may be regulated or prohibited, at least in front of the houses, in the interests of beauty and uniformity of appearance. The location of telegraph poles and similar structures may be restricted or determined.

These various restrictions which are fixed by the land company are almost always arranged to endure for a limited time only. It is obviously impossible to predict in most instances, for more than twenty or twenty-five years in the future, what the desirable use of a given piece of land may be, and it is therefore too great a burden on the land to fix its use by legal restriction for a longer time. In some communities it may prove feasible to arrange for further continuance or change of the restrictions at the expiration of this time by majority vote of the owners.*

In all the attempts of the land companies to assure the excellence and stability of the development under their charge they are laboring under two disadvantages. They have control only of a portion of the neighborhood and they are not themselves able to predict or directly to influence the development of neighboring property. When they have sold the last of the land, they have relinquished all power over it except as it is bound by the temporary restrictions in the deeds, and there is no organized body to take their place in caring for the property as a whole, except as this may be done by the community at large.

Zoning and Municipal Control of Land Subdivision

It is evident that the city has this power, and our cities are beginning, for the first time in any large way, intelligently and systematically to exercise it. The city may determine on a plan for the future development of all its holdings, it may make regulations for the uses of these

* This point is discussed in the Proceedings of the National Conference on City Planning, 1916, in *Financial Effect of Good Planning in Land Subdivision*, paper by J. C. Nichols, p. 91–106, discussion, p. 106–118; and *Districting through Private Effort*, by Alexander S. Taylor, especially p. 180–183. For a table of restrictions compiled by Olmsted Brothers see *Landscape Architecture*, Oct. 1925. For a statement of the relation between zoning and restrictions, see E. M. Bassett in *National Real Estate Journal*, Jan. 2, 1922, v. 23, p. 26. For examples of restrictions in deed, see those of Roland Park Company, Palos Verdes Estates, etc., and others on list in monograph by H. C. Monchow, *Use of Deed Restrictions in Subdivision Development*, Chicago, 1928.

holdings, confining different uses to their appropriate places, and, as the city wields a permanent authority, it may at any time modify the details of its regulations, bearing still in mind their main purpose and their part in the general scheme.

The control by the municipality of land subdivision and building development is becoming widely recognized as an essential of sound community growth, — recognized not only by city planners but by realtors and subdividers who have seen the economic and social benefits already accruing in planned communities. The subdivision or platting regulations now in force require submission of development plans to a municipal authority, usually the plan commission; these regulations include certain appropriate standards as to lot sizes and certain requirements as to construction of roads and installation of utilities; and — most important from the community point of view — provision is made for compelling conformity with the master plan of city or region, where this exists.

In these platting and zoning regulations, in the greater limitation by community authority of individual activity which is not for the community good, we have the hopeful beginning of a sane and organized relation between land development and city planning, which will stabilize and simplify the work of real estate development and do away with a vast amount of wasted — because unrelated — private effort.

PART IV

LANDSCAPE PARKS AND RESERVATIONS

Man's need of recreation — CLASSIFICATION OF OUTDOOR RECREATION AREAS — Their relation to the city plan: park systems — THE LARGE LANDSCAPE PARK — SITE AND AVAILABLE LANDSCAPE CHARACTER UNITS — EXTENT AND SECLUSION — Park use and landscape units — LANDSCAPE CHARACTERS BEST FITTED TO PARK USE — Pastoral landscape — Wooded landscape — Rocks and ledges — Brooks and ponds — USES PROPERLY SERVED BY A LANDSCAPE PARK — ACCESS AND ENTRANCES — CIRCULATION — Roads — Bridle paths — Footpaths — Interrelation of roads and paths — BUILDINGS PROPERLY SERVING PARK USES — Buildings in relation to the park landscape — MINOR STRUCTURES: park furniture — Park boundaries and gates — LANDSCAPE RESERVATIONS: MUNICIPAL AND METROPOLITAN — Combination with other uses — STATE AND NATIONAL PARKS AND RESERVATIONS — National planning.

Man's Need of Recreation

If any community of men is to be successful and permanent, it must provide for its members: a place to live, a place to work, facilities for transportation, and opportunities for recreation and inspiration. In regard to transportation, water supply, waste disposal, and defense, the activities of civilized communities have long been organized on the basis that the community as a whole must perform these services for each of its members, and that each member shall contribute to the support of the whole, or at least that certain designated people should perform the services, with community support and under community regulation. In all our larger communities it has become necessary for the public to take over also the provision and supervision of certain kinds of recreation.

Every one needs recreation, that is, something to do and to think of that is not work, something different from the ordinary routine of existence; and every one at times needs inspiration, that is, something to make him see the world and his place in it in some broader way, to feel the presence of the larger forces of the universe. Men's recreations

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will differ as men differ, but as all city dwellers are alike in suffering, each in his degree, from the restriction and crowding of the city, so they are alike in needing some recreation which will offset this restriction.* A complete antithesis to city conditions, and so an effective relief from them when they become oppressive, is to be found in the country or in wilder nature.† So long as rural or natural landscape lies close about a town, and every man can seek it for himself, no public provision is necessary in this regard, but such a condition is plainly impossible in a city of any size, and it has long been the case ‡ that cities have reserved and developed certain large open areas for this public use. These areas were acquired in many different and often fortuitous ways, and used for many different purposes. They had little in common except that they were open to the public and not built upon, and the term "public park" which we came loosely to apply to them had, and unfortunately in many places still has, little meaning more definite than this. It is obvious, however, that there are many different kinds of outdoor recreation, each good in itself, each necessary to be somewhere provided for, but not all capable of being carried on in the same place at the same time. Where the problem of outdoor recreation areas has been studied by our modern cities, there has been an attempt to segregate these areas and to develop them, each for its own function, so that in the aggregate as an organized whole they may best provide all the forms of recreation which the community owes to its members.

Classification of Outdoor Recreation Areas

No hard and fast classification is possible, for the needs and the opportunities of our communities vary, but in a rough way we may differentiate for modern American cities the following types §:

The neighborhood playground, including: the children's playground, for boys and girls under twelve; the girls' outdoor gymnasium, for intensive use by girls over twelve; and the boys' outdoor gym-

* Cf. Chapter V. Cf. passages in Olmsted and Kimball's *Central Park*.

† Cf. the footnote reference to F. L. Olmsted, Sr's, paper on *Public Parks*, on p. 18.

‡ The purchase of the area for Central Park was completed in 1856.

§ Cf. the classification given in *The Size and Distribution of Playgrounds in American Cities*, paper by Henry V. Hubbard before the National Conference on City Planning. (Proceedings, 1914, p. 265–304. Cf. also 1922, p. 1–33.) Revised (in accordance with studies of the Playground and Recreation Association of America) as *Parks and Playgrounds: American Experience as to their requirements and distribution as elements in the city plan*, from Proceedings of International City Planning Conference, Amsterdam, 1924.

nasium or restricted playfield, for very intensive use by boys over twelve.

The district playground or playfield, for the active play of adults and young people over twelve, in games taking considerable space, like baseball, football, tennis, and track athletics.

The recreation center, perhaps combining all the above.

Special facilities depending upon local opportunities, such as swimming pools, wading pools, skating ponds, facilities for bathing in lake, river, or ocean; specially developed viewpoints and so on.

The small park, or "in-town park," serving a dense surrounding population, not pretending to a rural appearance but depending upon its design, its foliage and flowers, sometimes upon architectural accessories, — providing amusements which can be enjoyed by crowds, and making the crowd a part of its design. "Commons," "public gardens," many of our larger so-called "squares," are of this type. The "promenade," which may be classed here, is most characteristically adapted to crowds, and dependent upon them. Our "parkways," which serve as pleasure traffic connections for our large parks, have a local use in some cases like small parks. In modern German practice, this general conception of predominantly formal design is applied also to parks of considerable extent, which with us would be treated rather as landscape parks.*

The large landscape park, or "country park," designed to give, as far as is consistent with fairly intensive use, all the sense of freedom that the unspoiled country gives, and being the nearest thing to unspoiled country that most of the city dwellers can commonly take time to enjoy. It is fitted to receive large crowds and not to be destroyed by them, and indeed not to be crowded by them, for its main use is still to relieve a man from too close contact with his fellows.

The "reservation," a public holding of country land, perhaps in connection with public forests or water supply, made accessible by roads, it may be, but not yet developed for intensive recreational use, and frequented mostly by picnic parties and others spending at least several hours at a time in the open.

Relation of Recreation Areas to the City Plan: Park Systems

The size of the areas for these various purposes, their location in

* Cf. Chapter IV, p. 54.

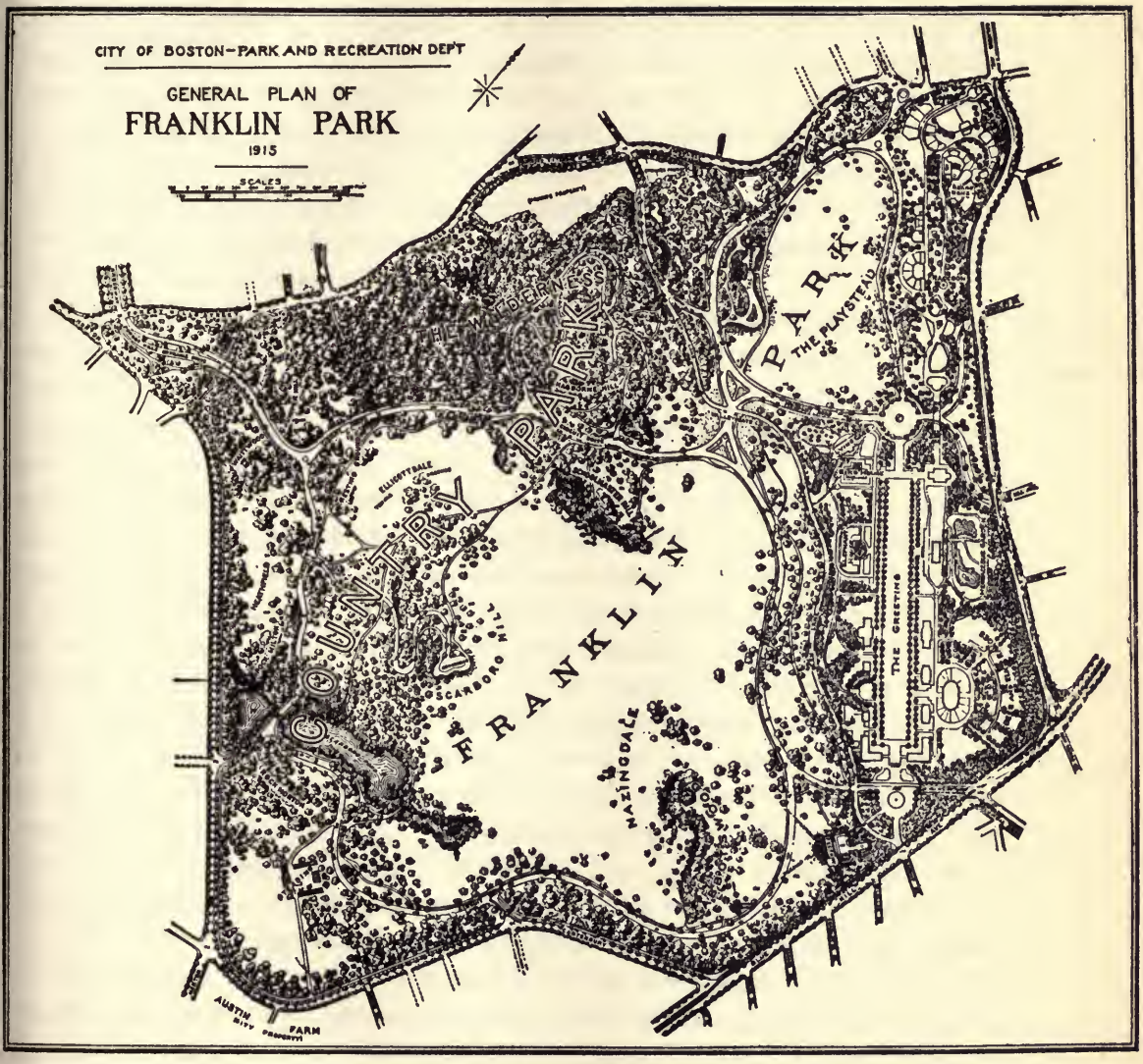
relation to each other and the city plan, have come to be a matter of definite and detailed study. In general it is evident that areas intensively devoted to play for children should be small, numerous, distributed through residential areas in accordance with density of population, and bearing the closest relation to the schoolhouses in their location; that the smaller in-town parks of various kinds, and especially recreation centers, should be distributed with regard to density of population both residential and also industrial and commercial; that the landscape parks should be usually more on the outskirts of the city, shaped and located so as to block traffic as little as possible and taking advantage of opportunities of existing landscape beauty or possibilities of its creation. The large out-of-town parks and reservations should be selected for their landscape beauty, present or possible, with due consideration of the probable growth of the community and of other legitimate uses to which the land could be put, so that the chosen park areas may meet recreational needs and not block the future normal growth of the community. Both connecting these larger recreation areas circumferentially, and particularly running radially from the center of the town outwards, should be designed some system of parkways, that is, some provision whereby those who dwell in the heart of the city may get out to the parks and back again to their homes without having the recreation which they obtain from the open places counteracted by a long journey through the very conditions from which they are seeking relief.

Of all these different forms of outdoor recreation facilities we have space in this book to discuss in detail but one, and we choose the large landscape park, because the design of this lies perhaps more completely than does that of some of the others in the province of the landscape architect, and because these parks are in many ways a typical product of American landscape architecture, in which a style of design* has been to a considerable extent wrought out, — a style which has had a great effect on landscape design particularly in the United States.

The Large Landscape Park

The landscape park (see Drawing XXXV, opposite), at its best, does more than to offer openness and freedom from the city's crowding and oppression, more than to provide naturally-growing trees and grass

* Cf. Chapter IV, p. 57.



DRAWING XXXV



in place of man-designed masses of brick and mortar, — more even than to present beautiful views and compositions in natural materials.* The park does all this, and this in itself is a great service; but besides this it gives, to every man who has the sensitiveness to respond to it, inspiration by its suggestion of the greater natural forces of which its beauty is, or seems to be, the direct manifestation. It is seldom that a city is so lucky as to have near at hand really notable natural scenery; but even where it has not, its landscape parks may still heighten and perfect the type of natural character which they have, so that they not only give pleasure by their own beauty, such as it may be, but also give some subtler inspiration by their naturalness.

Site and Available Landscape Character Units

In choosing and developing the site for a landscape park, the first considerations are what landscape character or characters are exemplified within its bounds, to what uses a park having these characters can be put, and how completely these characters may be preserved, enhanced, and maintained when the park is so used. The different kinds of available landscape should be considered, so that, for instance, the freedom and opportunity for exercise given by an open meadow, the seclusion and shade of a wood, the sweep of view from a hill, the interest of a woodland brook, might all be available somewhere in the system. A very rocky, precipitous, and romantic spot might be desirable on account of its great interest; but the future effect of intensive use on this character, through the presence of crowds, should be borne in mind. If the interesting cliffs and bowlders and gnarled trees may be looked at and not overrun, such a piece of scenery may be a very desirable portion of a park. If its romantic ruggedness is likely to become disheveled shabbiness under the feet of the crowd, then some less interesting but more permanent character might well be chosen.

Of course the landscape must be made sufficiently accessible so that it may be enjoyed, but great pains should be taken, particularly in small-scale landscape units, lest the introduction of a road or path should destroy the very landscape character it was intended to dis-

* "First, the chief end of a large park is an effect on the human organism by an action of what it presents to view, which action, like that of music, is of a kind that goes back of thought, and cannot be fully given the form of words."

F. L. Olmsted, Sr., *Notes on the Plan of Franklin Park*, 1886, p. 106.

play. It is definitely to be predicted that this use will increase in intensity as time goes on. A park area may start as an out-of-town reservation, and through the growth of population become in time almost an in-town large park. It is essential therefore that the landscape characters chosen should be such that they may be either defended from this increased use when it reaches such an intensity as to be harmful, or else that the character may be modified to allow this increased use without too great loss of beauty. This question between stability and convertibility of landscape character units in a park is a very important one. It may affect the plan of the individual park, its access and circulation, according as a certain scene is to be permanently preserved, or only temporarily enjoyed so long as the increasing use does not destroy it, and later turned into some other form better to endure the use. It may affect the plan of the whole park system, according as certain uses may be outgrown by certain parks and taken over by others.

Extent and Seclusion

If it is in any way possible, the park should contain some landscape units which give an effect of extent. It should have some large open area; it should dominate a distant view. For in this visible extent, more than in any other one thing, the park is likely to be different from the town. If a choice might be made, then, between one site covered with a compact wood and one with sufficient groves but also considerable opens, the second site, other things being equal, would probably be preferable to the first. Some considerable wooded area, however, is necessary in a park in order that people may walk about in the shade with a sense of freedom and ability to go where they will without necessarily following a path, and so that many people may do this without being unpleasantly aware of one another's presence.

Since the park is essentially something different from the town it should be screened from the town. So long as the views out of the park are into open country-side, they may well be allowed to remain open, but it is dangerous to let the beauty of the park depend considerably upon them, if at some future time the town is likely to surround the park. It is possible, however, in some cases to arrange views from the park across adjacent lower land to a distant hill, and so to manage these views that the lowland may be filled with buildings without obtruding upon the view. Where the town comes up to the boundary of the

park, there is likely to be pressure brought to bear by the abutters to provide for views into the park from the surrounding buildings. It is almost certainly a mistake to allow this. The benefit of the view accrues only to those in the houses surrounding the park; the detriment of the incongruous buildings visible from the landscape park falls upon all the inhabitants of the whole city who use the park.

Park Use and Landscape Units

Some people seek a landscape park for vigorous exercise in the open air, walking or riding, or playing such games as are permitted. Others go for quiet and rest. Some like the exhilaration of open spaces and distant views, or the interest of rugged scenery. Others prefer a secluded and retired spot, peaceful and intimate, with the small beauties of ferns and wild flowers. Some people are glad to mingle with their kind; others wish to be alone. The park should offer as far as possible to each man his own enjoyment. There should be different areas fitted for the different legitimate park uses as well as distinguished by different landscape characters. The frequenters of the park will thus find a double source of sustained interest, — the possibility of various enjoyments, and the studied sequence of landscape effects.*

Landscape Characters Best Fitted to Park Use

In our American parks, the landscape character which has proved in many instances to be the most readily obtainable, the most fitted to diverse uses, the easiest of upkeep, is a pastoral character, having much in common with the English pastoral scenery, and being in many cases an adaptation of existing pasture land and meadow land and surrounding woods to the needs of a park. (See Plates 31 and 33.)

Pastoral Landscape

The turf carpet of the open areas, mowed or kept down by sheep, has the advantage of its own beauty, of harmony with the rest of the landscape, together with reasonable cheapness of upkeep and considerable resistance to wear. The woods crowning the higher land, enframing the turf areas, segregating one unit from another, — when they are made of high-branched deciduous trees arranged in open groves as they may be in pastoral landscape, — may endure considerable traffic among them without great harm, and make pleasant resting places commanding views across the open meadows. The shrub plantings, which are more difficult to maintain and to police, are chiefly used as screens, along the boundary of the park or between one part of the park and

* Cf. Chapter V, p. 71–72.

another. They are also often planted as a protection on steeply sloping ground which would be denuded by traffic if left open, or in any other areas from which traffic should be kept away. The shrub areas, and often some of the tree plantings as well, must themselves be protected from destruction by foot traffic, if they lie so that there is a temptation for people to force a passage through them, and particularly when, under these circumstances, they stand upon sloping ground where the soil will be worn and carried away by water if people walk upon it to any extent. Dense prickly shrubs like barberry and hawthorn will often defend themselves, the ground surface, and perhaps the trees among them, if once they are established. In good design, however, it is often possible to arrange the lines of travel so that people are attracted from one opening to another, and there is no considerable temptation to the public to make short-cuts through the plantations.

This pastoral park design in open meadow, undulation of ground surface, and groups and masses of open trees, though it may be thoroughly satisfactory as the character of one unit, even of the largest unit of the park, becomes monotonous when too much repeated,* and in many instances it has been unintelligently imposed upon park areas in which some existing local character might have been seized upon to produce a different effect well worth such extra cost of maintenance as it might entail.

Wooded Landscape

Within the wooded areas, different characters may be brought about by developing different kinds of trees. Even when a park is made from an area already wooded with a mixed stand of timber, it is possible by judicious cutting and planting to produce, for instance, a pine grove in one place, a beech grove in another, an aspen grove in a third, and their different effects will make new appeals to the observer without necessarily destroying the broad effect of the forest mass. The destructive results of traffic upon the roots of some trees tend to limit the choice of the designer in the characters of woodland which he may use. Hemlocks, for instance, are likely to be destroyed by too great trampling of the ground. The relation of topography, traffic, and choice of trees should be considered from the first. Areas which must be frequently traversed or used for picnic or music groves must be planned eventually

* Cf. footnote on p. 82.

to contain trees which will endure this treatment. If there are existing areas of natural beauty, containing delicate vegetation which would be destroyed by traffic, or if there is an opportunity to obtain such beauty, too great to be neglected, traffic lines must be so arranged and such policing provided that these particularly decorative areas may be enjoyed but not traversed.

Rocks and Ledges

Rocks and ledges, particularly those which are high and steep, are usually well worth preserving as objects of interest in a park, but they must be protected by directing the traffic much in the way that we have just discussed. People may be brought to the foot of the cliff where they can look at its face with its decoration of moss and fern, and they may be brought to the top of the cliff where they can get the effect of its height and a certain pleasing sense of danger in being near the brink of a precipice, and where perhaps there may be a good view. The paths should be so laid out, perhaps brambles and strong-growing thorny plants should be so arranged, and the region should be so policed, that danger to the people and destruction to the scenic beauty by persons attempting to traverse the steeper slopes would be made very slight.

Brooks and Ponds

Brooks and ponds* are very desirable features in parks. They give a life, a unity, and a center of interest to the landscape which will often make the difference between a monotonous scene and a charming one. (See Plate 32.) It very frequently happens, then, that the landscape architect is called upon to design a pond or stream where none already exists, or to adapt an existing one to the uses of a park. Again the difficulty arises of producing or preserving the natural character while providing for intensive use, and this fact will tend to restrict the kinds of natural character of brook and pond which may be used. In the case of streams it may be possible to keep the traffic away from the banks, except at designated places, by planting and proper path design, and to have at these places bridges or some treatment of rocks and stepping stones and gravel beaches which may be walked upon without great damage. The views upstream and down from these selected places will of course be wrought out with special care. Natural ponds, particularly in a meadow country, are likely to have marshy banks

* Cf. Chapter VIII, p. 137.

which cannot be walked upon by crowds without damage. Sometimes proper arrangement of paths will keep the traffic where it is intended to go, particularly if the marsh is wet enough to be unpleasant footing, but a certain general suggestion of unhealthfulness in such a place and the very real difficulty of combating mosquitoes make such a pond often undesirable in a much frequented park. In the case of artificial ponds where the water supply is limited, as it often is, such a shore treatment usually would have the additional disadvantage of wasting the water by seepage into the ground. If it is unavoidable that people should walk along directly upon the shore of the pond, then a sand or gravel beach is almost the only shore treatment that can be used; certainly no shore-growing herbaceous plants will be possible, except such things as grow actually in the water. It is much better with ponds, as with streams, to have a path skirt the water, far enough back from the shore in most places to admit of naturalistic shore treatment, but commanding sufficient glimpses of the pond from everywhere along its course, and at places coming out upon beaches or projecting rocks or perhaps bridges, from which particularly designed uninterrupted views may be obtained. (See again Plate 32.)

It is a frequent practice to keep some water fowl on a pond in a park as a feature of interest, even when no zoölogical collections are kept elsewhere in the park. If there are not too many birds in proportion to the size of the pond and if they are given an island, where they may stay upon the land by themselves, the pond and the pond shores will not be appreciably injured. If too many birds are allowed upon a pond, however, the muddied shores, the muddy water of the pond, and the floating feathers may more than offset the advantage of the interest in the birds themselves.

These general considerations among others are worth taking into account in the design of any landscape park in this country, but every park will bring its own particular problems. The designer must bear in mind the legitimate uses to which the park is to be put and plan his woods and open areas in sufficient relation to these uses, but he should also, as the best means of making his park serve its primary use, study the natural character of his ground, make the most of existing smaller ground forms and characters, and make the use-units of his design

coincide as far as may be with character-units of the topography. His park should be a work of art, and its planning an act of artistic composition. Each separate scene may be composed much as the painter composes the forms upon his canvas, but the total composition of a landscape park is not only a summation of a series of views, not only a proper provision for rest and exercise, it is a harmony in naturalistic landscape effects.*

Uses Properly Served by a Landscape Park

As we have seen, a landscape park should properly serve many different purposes within its province, and for the greatest efficiency of the park it should be determined by the designer to what purposes the park at large may be devoted without any particular adaptation of its character, for what purposes segregated areas should be provided, and for what purposes it will be desirable to provide areas of particular and definite shape, probably not usable for any other ends. In a general way the recreation which a person may obtain in a park is of two kinds: on the one hand, active exercise; and on the other, passive recreation, that is, rest together with the contemplation of interesting sights. For the first, such activities as walking, picnicking, folk dancing, various running games of children, coasting, tobogganing, snowshoeing, skiing, skating, swimming, boating, archery, might be carried on in a landscape park without any considerable change of the natural forms to adapt them to these uses. Such activities as golf, tennis on grass courts, lawn bowls, require the modeling or leveling of certain portions of ground, but still need make no very great change in the landscape. The pleasures of listening to music or enjoying out-of-door dramatics or spectacles may be provided for by architectural music-courts or outdoor theaters, or they may be carried on in music groves or natural amphitheaters without much change in the landscape character of the park.

A promenade for crowds, however, or any area properly designed for the use of people who wish to walk back and forth in the company of many others of their kind and to be entertained by the sight of interesting things along the way, will introduce into a park an element which cannot be completely made a part of any natural landscape character. Similarly zoölogical gardens and displays of cultivated flowers,

* Cf. Chapter VI, p. 83.

although their design may be treated in a naturalistic or at least informal manner, as may the design of a promenade, still are obviously of man's making rather than of nature's, are places for crowds rather than for mere neighborliness or for solitude, and therefore are best treated as a separate unit in the park design. Indeed in most cases the design of promenades, at least, is best treated in a frankly formal manner.

The recreations of riding, driving, and motoring, and often of walking, have their very considerable effect on the design of the park on account of the construction of roads or paths.*

These various recreations, though each is individually desirable, will interfere with each other in different degrees, and they are by no means all equally desirable from the point of view of the number of people who may engage in them per unit area of land employed. Golf, for instance, takes a very large amount of land and comparatively few persons can play at the same time on the same course, while the course is rendered dangerous to any one who might venture upon it for any other purpose. A golf course, therefore, is likely to prove an inadvisable use of ground except in a park not as yet intensively used, or on a piece of park property which can properly be set aside for this purpose alone. Archery also requires a space to itself while it is being carried on, but since it is seldom practiced in any park for more than a few hours a day it is usually possible to meet the danger by proper policing of the area, which at other times is open to general use. Coasting, tobogganing, and ski-jumping, though they may be carried on by a few people with no particular danger or supervision, if they are participated in by great crowds must be supervised and confined to definite localities properly prepared. At some inconvenience to the players, tennis may be played with no apparatus except courts marked out upon the ground and removable nets. A group of tennis players on an open park lawn would be considered by most people an interesting rather than an incongruous feature, and when the play is over nothing need remain but the lines of the courts upon the turf. (See Plate 33.) Such tennis courts are hardly fit for the most scientific play, but dirt courts with back-stops belong in a playfield and not in a landscape park.

* See later in this chapter.

Sports like baseball, cricket, and football are much in the same category as golf: they might be allowed in the open turf area of a landscape park if that area could be closed to other activities during the time without noticeable inconvenience, but if provision for match games is to be made, with grandstands, and noisily enthusiastic crowds are to be expected, these recreations also are more properly provided for in the playfield.

A certain amount of unorganized play by smaller children is practically unobjectionable in a landscape park, and arrangements for May Day festivals and the like are very desirable, but any organized provision for apparatus play in a landscape park is made at a sacrifice both to the playground and to the park.* A playground is most effective when the children who use it can all come from a short distance. If it is in a park or on the side of a park, it is evident that its tributary area lies almost wholly on one side of it and the average distance which its users must come is doubled. From the point of view of the park, a playground with apparatus is an utterly incongruous object in the landscape. Even if it be assigned a separate area, and even if when this area is set aside there remains sufficient area for legitimate park purposes, still the noise of the children playing would be unobjectionable only in an adjacent zoölogical garden or promenade, and would distinctly decrease the restful effect of an adjacent landscape park unit.

There are a number of other recreational activities occasionally found in parks, such as merry-go-rounds, roller-coasters, shooting galleries, Punch and Judy shows, and so on, which, while they provide a perfectly legitimate form of recreation, still are not congruous with the purpose of a landscape park, because their whole suggestion is of crowds and the kind of excitement to be found in crowds. These "commercial recreations" belong properly in an amusement park which might perhaps be near the landscape park but not of it. It is an argument in favor of having such recreations as these near a landscape park and of having such provisions as a promenade and a zoölogical garden occupy

* See the paper by F. L. Olmsted, Jr., *Playgrounds in Parks from the Designer's Standpoint*, read before the American Association of Park Superintendents. (See REFERENCES.)

an area on the city side of a landscape park, that people come to seek these amusements and then enjoy the freedom of the landscape park, who would not seek the park for itself alone, and that each recreation makes the other more effective. It should go without saying, however, that the landscape park serves a purpose which nothing else can serve, and no argument in favor of the juxtaposition or incorporation of these incongruous recreational facilities can justify their inflicting any considerable injury on the landscape park.*

Access and Entrances

The road and path system of the park should be related to the street system of the city to the extent that the main entrances to the park should communicate with the readiest ways of travel from the heart of the town. Often those who use the paths in the park come to the park by electric car, and the path entrances and circulation are arranged for convenience in this regard. The main park road should enter the park at the point most convenient of access from the town, commonly where the parkway from the town reaches the park. A continuation of the ordinary city streets into or through the park is undesirable, however, for the sake of the efficiency of the park. Any landscape park which serves its primary purpose well will almost inevitably entail some inconvenience to the ordinary street traffic in the neighborhood. In fact the pleasure drives in a park may often be legitimately so designed that they are intentionally inconvenient for through traffic, — all through traffic, especially of course commercial traffic, being kept to its own segregated crossing roads.

The subordinate entrances to the park should be so arranged that they throw their pleasure traffic conveniently into the general circulatory system of the park with the least possible construction of uninteresting road and at the same time the least possible opening up of views between the park and the surrounding streets. In their relation to the general outside street system each should serve its own district and be so located that traffic can come to it by the most pleasant ways available and without any undue circuitousness.

If a park forms a part of a park system, the entrances should be so arranged that pleasure traffic may visit one park and thence go to

* Cf. the article by Robert Wheelwright, *The Attacks on Central Park*, in *Landscape Architecture*, Oct. 1910, v. 1, p. 9–21.

another without leaving unvisited any particularly interesting stretch of road and without being obliged to traverse the same road twice.

Circulation

The roads and paths in a landscape park by means of which people on foot or horseback, or in automobiles may go through the park, enjoying its beauties on the way and being conveniently conducted to particular points of interest and beauty, are usually, from the point of view of naturalistic character, a necessary evil. It is true that if the park be made to resemble a rather completely humanized countryside, the roads and paths may at least theoretically be given much of the beauty of English lanes and by-paths, if the traffic to be handled be not too heavy, and such a landscape might be very beautiful and serve well its purpose of one kind of a country park. Very frequently, however, the landscape character in the park is a wilder and more natural thing than this, perhaps because it is what the site offers, perhaps because the designer feels that this character is more interesting and more different from the city. In this case certainly the principal recommendation of the roads is their practical necessity. The park roads should allow of driving in a circuit, — if the park is large, perhaps in several circuits large and small, different in the views that they command. The various scenes which are to be displayed to the visitor by automobile should be revealed to him to good advantage and in pleasing succession, that their characters may enhance one another. The circuit drive should of course be far enough within the park to allow of a sufficient screen between the drive and the outside city: the drive should be in the park, that is, not between the park and the town. To some degree, an increase in the length of the road merely to give a greater duration to the pleasure of the traveler, and to make the extent of the park seem greater is legitimate; but any addition to the length of the road is by so much a diminution of the area of the park itself for those for whom the park may be said to be primarily designed, those who enjoy it on foot.

Roads

Theoretically at least the only wheeled traffic, except service traffic for the park itself, which should be allowed upon park roads, is pleasure traffic, people proceeding at a leisurely rate to enjoy the fresh air and the beauties of the park. General service and commercial traffic should go around the park if this be possible; if not, certain cross roads

for traffic should be arranged, doing as little damage to the landscape as may be and crossing the park roads as few times as can be managed, preferably passing under them so that the two types of traffic are entirely separated. Rapid traveling by automobile, primarily for the pleasure of smooth and fast motion, is not one of the recreations which can be efficiently offered by a landscape park of any ordinary size. A park may lie at one side of a pleasure boulevard for speed traffic and the large views of the park may be enjoyed as far as this is possible by the passing motorists; but the intersection at grade of such a speedway with the park roads is dangerous to the traffic on both roads, and the noise and dust of the speedway and its suggestion of hurry and tension are destructive of the sense of quiet of the park. The speed limit for automobiles using the park roads themselves should be set so low that foot passengers can cross the road without any great feeling of hurry or danger. Such regulations will allow the park roads to be made somewhat narrower and with somewhat sharper curves than they otherwise might be, thus materially lessening their conspicuousness and the damage which their necessary grading may do to the natural ground surface. It is of course desirable in almost every park, from the point of view of the service of the park to all the public, that some of the park roads at least should be open to pleasure traffic by automobile, and these roads should be so designed that this traffic under proper speed regulations shall be pleasurable, that is, that the gradients shall be easy, the turns ample and safe, and the views obtained from the road interesting. On the other hand, the automobile owner has at his command, and will have for many years to come, a great deal of rural beauty not in parks which is inaccessible to the city-dwelling pedestrian. The pleasure roads in parks, therefore, should not too much encroach on the enjoyment of park scenery by the pedestrian, and if a choice must be made between the two uses, it is usually fairer to the community as a whole to make this choice in favor of the uninterrupted character of the park itself, that is, in effect in favor of the pedestrian. While the speedway has and must have the self-assertive unity of wide-swinging curve and clean straight, the good park road — at least in topography that is at all uneven — may be irregular in curvature, shrub-grown at the edges, somewhat steeper in gradient, slightly rough and

inconspicuous in surface, sunk below the surrounding surface in places to avoid interruption of a view, even slightly irregular in width if thereby it might carry its traffic to the points intended with less interruption of the natural character of the landscape.

Park roads will naturally lie for the most part in the wooded areas or running along their outskirts, alternately commanding a view from a bay of foliage, or again passing through a shady promontory of the woods. The road may be shaded by trees regularly spaced along it, if it be desirable to introduce so obviously man-made an element into the design. In any case the roads will tend to lie between different separate units of the park. It is often desirable that the road should not command at the same time views into the separate units on its two sides. This is of course the case where the characters of the two units are incongruous, as for instance where the low-lying land in one unit might betray the fact that a lake in the other unit was held at its level by artificial means.

Bridle Paths

Bridle paths in parks are commonly so intensively used that they cannot be treated simply as certain portions of forest or meadow which may be traversed by riders, but must be definitely laid out and surfaced. Nevertheless the softer surface of gravel or tan bark may be made inconspicuous, and as the restrictions of gradient and sharpness of turn are by no means so great as they are with roads, and as a bridle path need not necessarily be very wide, the bridle path can go, without material damage to the landscape, into places where a road would be impossible. Like a road, the bridle path should form a circuit or series of circuits and should offer to the view of the rider an effective series of different landscapes. It should cross the roads and footpaths as few times as possible, and where these crossings occur, the planting and grading should be so managed that one kind of traffic is not thrown into the course of another suddenly and from behind a screen.

Footpaths

Wheel traffic must perforce remain upon the road; riding traffic can usually be without much difficulty practically confined to the bridle paths and roads; but with foot traffic there is always a danger that it will leave the paths for some other route, unless everywhere along the paths it is easier or pleasanter to follow the path rather than to traverse the park along some line not contemplated by the design. If the foot

traffic is not too great and this general wandering over the surface of the park does not prove too destructive to the park beauty, it would be more pleasant to many active people than walking upon the paths, and should certainly be encouraged. As the intensity of the use of the park increases, however, there will come a time when foot traffic will have to be confined to the paths if any landscape beauty is to remain to be enjoyed.

The natural tendency of people to follow a path when it is pleasant, and to follow any path on the assumption that it leads to some sufficient goal, should be taken advantage of in a landscape park by such arrangements of paths that people are induced by them to go to the best points of view and to approach these by the most desirable way.

In irregular landscape and particularly in woods, it is often possible to make a footpath little more than a convenient way of walking from one place to another without any particular preparation of the surface of the ground other than the removal of any obstructing vegetation. Even when the traffic is considerable, it may be possible to use gravel or pebbles or even pine-needles or leaves or tan bark to prevent the ground from becoming dusty or muddy, still not producing a definite line of path which will tell for itself as an element in the design. In a flat or gently undulating topography, however, and particularly in open country, if any considerable amount of traffic is to be provided for, the paths must be definitely surfaced, and if any very large extent of paths is seen at the same time, their shapes as elements in the design should be studied. There will be four considerations which particularly affect their appearance: the pattern which they make together with the plots of turf or shrubbery at their sides, the beauty of their own curves considered purely as decorative flow of line, the adaptation of these curves to the needs of traffic, and the fitting of the lines and gradients of the walks to the topography. Any path, even a pleasure path, in a park should seem to lead somewhere or at any rate to make a circuit by a way chosen as the best. A path which wanders about with no discernible reason is an annoyance for every passer. When one path diverges from another, therefore, it should carry its line of traffic off in a smooth sweep, or if it breaks sharply away from the other path, there should be some obstruction or some attraction

as a reason for its doing so. Especially in a park, where short-cutting is so destructive of landscape beauty, a path should go towards its goal by the easiest way, or if it does not actually do so, sufficient reasonable obstructions should be introduced to give it this appearance.

Beauty of curve of path, although it is decorative and seductive upon the landscape plan, is a beauty to be sought only rarely in a landscape park. Like the flowing curve of the road, it emphasizes the unity of a man-made thing and is therefore by so much incongruous with naturalistic landscape character. Moreover in a wooded park the sequential relation of comparatively distant parts of the same curve which makes their beauty on plan often cannot be perceived in reality. (See Plate 34.) Again, in an irregular topography decorative flow of curve of path can seldom be obtained without some further sacrifice of the closeness of the fitting of the path to the topography. If beauty of curve can be produced without this sacrifice the only argument against it is the greater conspicuousness it gives the path, and an argument in its favor would be the apparently somewhat greater consistency of direction of traffic over it, although this last effect would probably be sufficiently produced by a smooth curve even if it were not necessarily a decorative curve on plan. In a level park, largely open and intensively used, where the materials of the design are roads, paths, trees, shrubs, and turf, and where perhaps the paths cannot escape far from the influence of the roads, — or in other words where no better beauty may be obtained, — this beauty of sequential path curvature may be legitimately sought. (See Plate 31.)

Interrelation of Roads and Paths

Roads, bridle paths, and footpaths in a park* may be run parallel to each other, for instance where they pass through a narrow screen of woods between one open unit and another, or where they must all pass through a narrow valley, but since the bridle path can go where the road cannot, and the footpath can go where the bridle path cannot, much parallelism of these different ways is a waste of opportunity. Where they do run parallel it is still possible to separate them by trees and shrubs so that the noise and possible dust of the roads are made as little annoying as may be to those using the footpaths. Running a footpath alongside a road as a sidewalk is almost never advisable in

* For materials for roads and paths see Chapter X, p. 227.

a country park. It is commonly best to have the scheme of circulation of a landscape park consist of a road system of easy gradient and ample curve, making a circuit or series of circuits in the park, displaying but not interrupting the larger landscape units; a bridle path system (if this is desired), making a number of interesting circuits, perhaps especially through the more rugged and wooded parts, but not unduly cutting up the wilder portions of the park; and a path system, accommodating foot traffic throughout the park, but as its special function giving access to those areas of more sequestered effect and smaller scale which would be particularly injured by the introduction of roads and bridle paths.

Buildings Properly Serving Park Uses

In determining what buildings should be constructed in a landscape park, the public should bear in mind the obvious and fundamental consideration: the purpose for which the park was created. Though a park may look like wild land, it is not, for that, waste land to be devoted piecemeal to any use which is in itself desirable. Landscape parks have been set aside by our cities at great expense to serve a definite recreational purpose, and all the experience of our cities goes to show that the service of the parks is well worth this expense; but this service can be rendered only so long as they retain their character as landscape parks. The introduction of buildings into them, therefore, is undesirable except such structures as shall serve the legitimate purposes of the park, and which therefore must be built for the sake of the park as a whole. The construction of a schoolhouse in a landscape park on the ground that the park gives light, air, and opportunity for play for the children, the construction of a public building in a park on the ground that the park makes an admirable setting for the architecture is a piece of short-sighted folly in the utilization of public property.*

There must be proper provision for the upkeep of the park, proper place for the storage of tools and vehicles, and the housing of work horses. It is usually desirable that some one in direct authority over workmen should live near these service buildings, and often that some of

* See the paper by Frank Miles Day, *The Location of Public Buildings in Parks and other Open Spaces*, with discussion, in Proceedings of National Conference on City Planning, 1911, p. 53–79. Also see the article by Robert Wheelwright referred to in footnote on p. 308, and several chapters in Olmsted and Kimball, *Central Park*.

the workmen themselves should be accommodated near by. This often results in the construction of the service buildings and living quarters in a group, which should be concealed from the park but should be convenient of access both from within and without the park. Some park service buildings are best located elsewhere than near this group, for instance, the sheepfold may be built near the meadow where the sheep are accustomed to feed.

It may be necessary to have some comfort stations where there are no other buildings. These should be concealed, but should have plain signs designating their location, and they should be conveniently placed, near those areas where the largest number of people congregate. Often these conveniences form a part of a structure devoted to some other use, like a boathouse or a restaurant; and in modern parks they are often combined with rooms, perhaps with an attendant in charge, to form a rest house which may be architecturally attractive and need not be entirely concealed.

A picnic grove may well have a restaurant where simple meals may be obtained or food bought to be eaten in the grove. In connection with the promenade or zoölogical garden which might occupy a portion of the park set apart near the entrance, there might be a more pretentious restaurant, perhaps facing upon the promenade on one side, and on the other facing a long view across the park. If the boating is an important feature so that crowds come to the boathouse, the main restaurant may be combined with this structure. If concerts are given in the park, they are probably best arranged for in connection with the promenade if such an area exists, in which case the musicians may occupy a part of the main restaurant shelter or there may be a separate bandstand constructed.

Special sports and games may each have its own shelter, but usually the park can be so arranged that several are served by one structure, containing lockers, showers, and having some caretaker in charge who furnishes small necessities for the various games and perhaps light refreshments. These field houses may be designed to serve both summer and winter sports, the boathouses serving the skaters and perhaps the golf house or the tennis house serving those using toboggans and snowshoes.

Important viewpoints in a park may be marked by shelters, which not only give a comfortable place from which the view may be enjoyed, but serve as a definite goal for a walk, a definite marking of the place from which the view is best, and give perhaps an added interest to a high point which would otherwise not be sufficiently dominant in the view.

Any of these shelters may serve as a refuge in case of rain and sometimes where there are no buildings for other purposes, shelters may be constructed for this use alone.

Buildings in Relation to the Park Landscape

The smaller necessary buildings in a landscape park may be, and usually should be, more or less concealed. The larger buildings, restaurants, overlook shelters, boathouses and so on, should be so set and enframed as not to be unduly conspicuous, and by choice of material and color and even, within limits, by modification of their form, they may be made more harmonious with the landscape.* In a park more than in some other situations, the form of a building may be legitimately modified to make it better fit the landscape composition, because the landscape beauty is a primary purpose of the design (see Plate 35), but even here it is seldom desirable to sacrifice architectural form and reasonable fitness to use by adopting curved and irregular shapes for the sake of making the building inconspicuous in the landscape.

Minor Structures: Park Furniture

The various minor constructions in a park, like seats, drinking fountains, light standards, and guide signs are subject in their way to the same considerations which we have already discussed in relation to the larger architectural structures. They should not be unduly conspicuous so that they introduce any unnecessary incongruity into the landscape character. They should, however, be effective for their own purposes. Seats and drinking fountains may be made very inconspicuous, often resembling natural bowlders, without being less useful. A drinking fountain, however, like a statue, may be used as an object of esthetic importance in the design, — it may be adorned with sculpture, or at least bear an inscription and perhaps serve as a memorial. Similarly a seat may be treated as an exedra at the end of a vista, formal or informal, and given considerable importance in the general composition, or a number of seats may mark definite points in a formal concert

* Cf. Chapter X, p. 189.

grove or similar area; but usually a seat in a park is better made inconspicuous. With lights and signs, however, this is not so much the case, since, in a way, their use is to be conspicuous. Lights are not efficient if they are much concealed among foliage. Sometimes the lights may be attached by brackets to trees, or the light-standards may be rough natural posts, but more commonly the light-standards must frankly serve their own purposes. Under these circumstances the best arrangement is to have the light supported by a well-designed simple staff of iron or wood, placed where it illuminates the greatest area, and perhaps marks the turn of a path or the edge of a road. It should still be possible, however, to arrange these light-standards so that by day they are not unpleasantly silhouetted against the skyline in an otherwise naturalistic landscape, nor obtrusive in any important views. The signs pointing out the way and perhaps calling attention to special features of interest must be legible if they are to be useful. Moreover they occur in connection with roads and paths and not elsewhere in the park, so it is the more reasonable to make them frankly man-made objects. It is sometimes possible to have a sign cut upon a bowlder or painted on a rough board hung from a tree, and where everything else is in scale with it, this amount of respect for the landscape character may be desirable. Irregular boards with rustic lettering are seldom effective, however, and it is usually best to have a simple straight standard bearing a simply lettered sign, the whole painted inconspicuously green or brown and the lettering white rather than black, for legibility. It might be remarked that where the distances are at all considerable it is a great comfort to the visiting sight-seer to be told not only the way to his objective, but how far he must go.

Sculpture in a landscape park, purely for its decorative effect, may find a place in the formal arrangements of the promenade near the entrance, but it may also be used successfully in the landscape park itself, especially where this is considerably humanized and makes no great attempt actually to imitate wild nature. Again, the test of excellence of the introduced object is its congruity with the general character of the park. Its appearance and, in this case, its significance and suggestion must be studied with this in mind.*

* Cf. Chapter X, p. 211.

Park Boundaries and Gates

It is practically impossible so to inclose a park that an active person may not get in almost wherever he chooses. Nevertheless it is desirable that there should be a definite boundary around the park, and, if the city presses close upon the park, that this boundary should be difficult to pass except at designated entrances. The typical treatment of the boundaries of our parks is a wall or fence and within it a boundary plantation. Reasonable economy as well as expression of the purpose of the park would dictate that this wall or fence should be permanent, but not ornate. A stone, or possibly concrete, wall is therefore in many cases the best structure for the purpose.

The main entrance to a landscape park should express the dignity of the park as an essential portion of the city plan, but it should also suggest something of the character of the park. An elaborate architectural entrance, owing its beauty largely to cut-stone moldings and sculpture, is from this point of view hardly ideal, except that sometimes it relates on its outer side to a formal plaza or the end of a great avenue and might possibly require a certain elaboration to bear its part in this composition. Usually, however, even here a simple and massive form would be more effective and more appropriate.

Municipal and Metropolitan Landscape Reservations

Almost all the cities in this country are growing in population, many of them at a very rapid rate; and there is at this time no apparent reason that this growth should not continue for very many years to come. It lies in the power of the cities and metropolitan regions to see that this growth shall be organized and directed so that the various necessities of existence for all the citizens may be best produced with least waste. Nowhere may the benefits of an enlightened and far-seeing public policy be more evident than in the case of reservations of land for recreational and other public purposes.

So long as the large public park remains upon the outskirts of the city, it may offer sufficient freedom and openness to satisfy almost all the people, and the few who require more than this may be able to find it by journeying farther into the still unspoiled open country; but in time the city will grow around the park; and perhaps through the cutting off of its distant views, certainly by its more intensive use, the park will become more humanized. In the meantime the outlying country will have turned from woodland to farms, from farms to gardens, and

from gardens to suburbs. Such landscape beauty as remains will be in private hands, almost necessarily closed to public use; and the more natural beauty of the far outlying country can be enjoyed by only the few who can afford to travel long distances to reach it by train or automobile.

Reservation of outlying land for public use, then, serves these important purposes among others: it keeps open a freer and less humanized kind of landscape beauty for those who need it and who are willing to go farther out than the landscape park to find it, — a kind of beauty which otherwise, if it were preserved at all, would be in private hands and closed to the public; and it assures the preservation of such beauty, which would be almost necessarily diminished, altered, or utterly destroyed under the pressure of growing intensity of use and rising land values. When properly done with due regard to main lines of traffic and the adaptability of different areas to different economic purposes, it helps to stabilize land values, to fix the character of neighborhoods, and generally to direct the future growth of the community in the way that it should go.

It is possible, and it should be considered with every city, that the present reservation may at some future time be the city-surrounded landscape park, and that another reservation may be needed still farther afield; but since each concentric ring of growth of a city means a greater and greater added area proportionally to the added radius, such a change in reservations lying some miles beyond the present outskirts of the town is probably very far in the future. It is fortunate that the very characters of landscape which render it best suited for use as landscape reservation, and perhaps subsequently as a landscape park, are likely to be those which render it least suited for the ordinary economic development. Uneven, rocky, and broken ground, ground heavily wooded, country with many streams and ponds, may count all these as assets if it is to be used for recreation, but they are all causes of expense if the land is to be intensively developed for residential, commercial, or industrial purposes. It is therefore usually possible in a broad way to determine where the main lines of traffic shall lie and what the uses of the different regions shall be * and to set aside the recreation areas in accordance with such a general scheme with con-

* Regional planning and zoning.

siderable certainty, even although the planning be far in advance of present need. As a matter of general public policy, this land should be acquired as soon as it is demonstrable that it will be needed in the future, because it can be acquired more cheaply now than it ever can be again, and because further developments upon it in ways incongruous with its ultimate recreational use are almost certain to prove a destruction or postponement of landscape beauty, and, since they must later be removed, an uneconomical application of enterprise.

It is not at all necessary or indeed desirable that any great expense be undertaken at once for the development of these outlying reserved areas, except such as may be necessary to preserve the beauty they have, to render them reasonably accessible, to police them adequately, and to do such planting as may profitably be undertaken at once with a view to their appearance perhaps fifty years hence. In some cases, indeed, while holding the land in fee, it may be wise for the municipality not to remove the land from its present use, but to allow it to continue perhaps as farm land, meadow, and pasturage, as orchard, or even as commercial woodland, with the legal proviso that nothing shall be done by its present tenants seriously detrimental to its future use. Occasionally the environs of a city may be so little distinctive in landscape character that practically whatever beauty is to be enjoyed by future generations must be created; or it may be that already certain economic use of the land to be set aside for recreation has so thoroughly destroyed previously existing beauty, in places, that no enjoyment of it as a whole is possible until these places have been restored. In either case early acquisition of the land would be advisable, that planting for the benefit of future generations should be undertaken without delay.

Combination with Other Uses

There are other purposes besides recreation for which the city must have such outlying reservations. The time is rapidly coming when we must grow our timber as we grow our corn, definitely as a commercial crop; but this can be economically done only at a large scale, and the broad areas of woodland so created offer too good an opportunity for public recreation to be allowed to remain in private hands or not to be combined with public reservations for recreational purposes.*

* Cf. the discussion of municipal forest reservations as an example of landscape characters in relation to economic use and maintenance, Chapter V, p. 72.

Again, where a city gets its water supply from a lake or river, the watershed tributary to this must be protected from pollution, that is, it should not be used for residential, commercial, or industrial purposes. It can, however, very well be used as a public forest and as a public recreation reservation, and the stream or pond which furnishes the public water supply may contribute greatly also to the beauty of the landscape.

State and National Parks and Reservations

In the preservation of natural scenery for public enjoyment, it is not possible for cities to do all the work that is to be done. It is true that since the great bulk of the population of cities seldom travels far from its own home, the outdoor recreation of its own people is the first consideration of this kind for the city to meet. There are nevertheless many millions of the people of the United States who do travel, if only occasionally, and who have therefore a certain interest in the beauty of the whole country wherever it may be found. It is right and necessary that much the larger portion of the area of this country shall be turned to economic use with only coördinate consideration of its beauty; but there are many areas the greatest service of which to the nation is that they shall preserve and display their present natural beauty for the refreshment and inspiration of all future generations. In the case of such natural wonders as the valleys of the Yosemite or the Yellowstone or the falls of Niagara, it is fairly obvious that their landscape beauty is a function not to be destroyed by any other use. (See Frontispiece and Plates 12, 13, 14, 23, and 24, all of which views were taken in national parks and reservations.) There are other classes of areas which also should be preserved and increased in their beauty, not so much because they present a landscape character very striking in itself, but rather because in them may be preserved a landscape character typical of the primitive condition of the country in which they lie, and sure of ultimate and utter destruction unless it is so preserved. Areas of these two kinds are often located not near any city, and they are usually too large to be possible of segregation and maintenance by any one city. Moreover, as we have said, the people not of one city alone but of the whole country have an interest and a right in them on account of their distinctive character. Such areas, therefore, are the proper charge of the United States or of the separate states. Although no hard and fast line may

be drawn as to which areas should be administered by the state * and which by the federal government, it may be said in general that those which preserve the unusual, in which all the country may be interested, may well be under national control, whereas those which preserve the locally typical may well be the property of the state. In either case of course they would be equally open to any one who might desire to come to them. These areas may serve also as forest reserves, or at least they may form parts of, or be contiguous to, areas reserved for such purposes. The proper uses of a national park and a national forest being however fundamentally different,† it is probably advisable, as our governmental machinery is at present organized, that though these different areas should be handled in the closest coöperation, they should be separately administered.

The matter of accessibility of these reservations, as far as it affects their internal development, will not be essentially different from that which we have already discussed under the subject of landscape parks. It should be religiously borne in mind by whoever has charge of them that not for any short-sighted reasons of making them self-supporting or advertising their value to the public at large or making all parts of them accessible to any one who might seek them, should their essential characteristics be injured, or should any policy be inaugurated which would in the future diminish the peculiar landscape beauty which they alone can furnish to the coming generations of the nation.

As to their accessibility from without, it is evident that they will be sought to a greater and greater degree not only by rail but especially by automobile, and that therefore the relation of the state parks to state highways and state parkways, and the relation of these with the national parks into one great system ‡ providing for outdoor recreation and recreational travel, is obviously a desirable thing, and one which we may hope to attain through consistent and intelligent effort in the not very distant future.

* Cf. article by H. A. Caparn, *Some Reasons for a General System of State Parks*, in *Landscape Architecture*, Jan. 1917. Cf. later papers on state parks by James L. Greenleaf and S. Herbert Hare also in *Landscape Architecture*, July, 1925, and July, 1926.

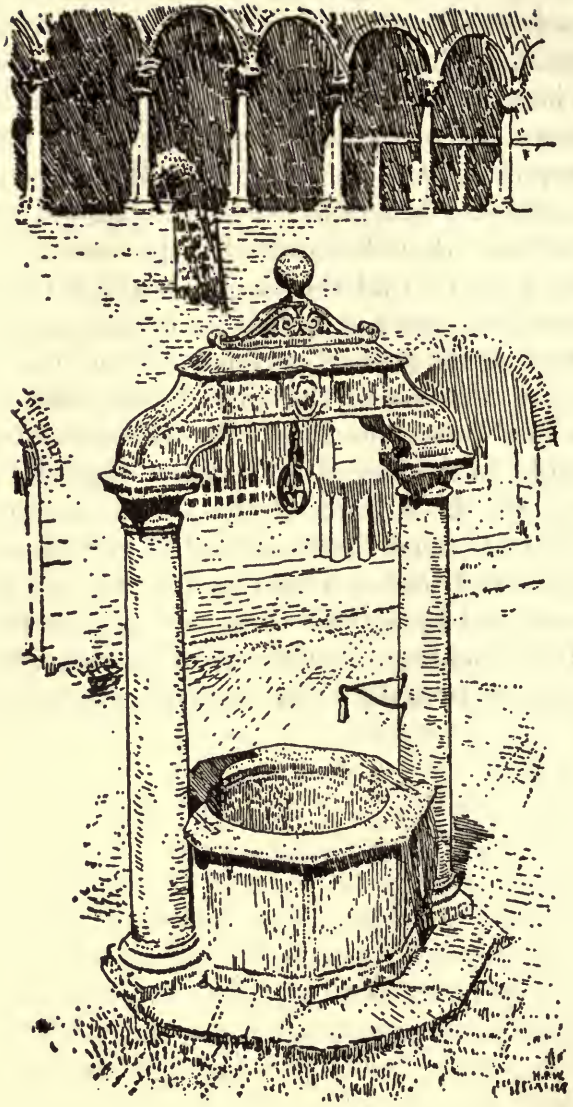
† Cf. paper by F. L. Olmsted, Jr., *The Distinction between National Parks and National Forests*, in *Landscape Architecture*, Apr. 1916, v. 6, p. 114–115.

‡ Cf. the national planning studies of Warren H. Manning and Cyrus Kehr.

National Planning

Almost within the memory of living men has come the effective conception of the city as a complete organism which must provide for its inhabitants such things as they cannot provide for themselves for complete and efficient living; and with this conception has come the realization of the importance to the individual and so to the community of beauty, and especially of outdoor beauty, and the duty which the community has to provide it. We are now coming to see that this same conception of a complete functional organism applies as well to the state and to the nation; that the lands of the nation should be studied as to their various fitness to all the purposes which lands may serve, and then so regulated that each may best serve that purpose, economic or esthetic, to which in the general national scheme it is best fitted.

The complete organization of the area of town and city and state and nation which shall bring this about, the wise administration which shall make it possible, in the face of the dangers of public incompetence and private greed, may be a thing of the distant future, but it is to come. And the greatest opportunity for public service which is before the landscape architect of to-day is that he may bear his share, by written and spoken word and by actually constructed example, in the public education and the molding of public opinion, through which alone this good thing may be brought about, and by which in the future it must be upheld.



APPENDIX

Part I

NOTES ON THE PROFESSIONAL PRACTICE OF LANDSCAPE ARCHITECTURE IN AMERICA

Professional conduct — Professional charges — Professional reputation — Advertising and publicity — Professional announcements — Public exhibitions — Competitions — Landscape architect, client, and contractor — Coöperation of landscape architect with other practitioners — Coöperation in city planning — Organization and equipment of a landscape architect's office — Clerical force — Technical office and field force — Office reference material.

Only within recent years has there been in this country sufficient demand for the services of the trained landscape architect to make it possible for any considerable body of men to carry on the practice of this profession. The American Society of Landscape Architects was founded in 1899; the first degree for the accomplishment of a designated collegiate course in landscape architecture was granted in 1901. But now (1929) professional degrees are offered by at least eight institutions in the United States,* and the field and scope of the profession and the technical knowledge which its practitioners should possess † are being differentiated with considerable clearness from the tangent fields of other professions like architecture and engineering.

Professional Conduct

The general principles of the proper professional conduct of a landscape architect ‡ are in effect the same as those governing the action of the architect, and are not essentially different from those relating to the work of the engineer, because they are fundamentally the principles of common honesty applied to the relations of a man who sells

* The American Society of Landscape Architects has issued a statement of minimum requirements for professional schools.

† Cf. Chapter I, p. 2. ‡ See code of professional ethics, adopted October, 1927, by the American Society of Landscape Architects.

skilled advice to a client, who directs for the client the carrying out of this advice, and who serves as arbiter as to the meaning of these directions between the client and the person who does the construction.*

According to the constitution of the American Society of Landscape Architects, "A landscape architect, a landscape gardener, or a landscape designer, in good standing is one who practices the art of arranging land and landscape for use and enjoyment, whose compensation is received directly from his client and not directly or indirectly from labor, plants, or other material used in fitting land for use, or from persons supplying the same." The reason that it is not advisable for the landscape architect to be financially interested in the sale of any materials used in the construction of his designs, or to take commissions from the seller on any materials which he orders, is of course that he would thereby be subjected to the temptation to choose his materials not for their greatest value in the design but for their greatest profit to him. Although any individual man might resist this temptation, all men would not, and every man would be open to suspicion. Moreover, it is much better that the client should know how much he pays the landscape architect for his advice, and so have some idea whether the service has been worth the payment, rather than know that an indeterminate part of the landscape architect's payment is concealed in a larger sum paid ostensibly for another thing.

Professional Charges

There are various different ways, suited to different circumstances, in which the payment to the landscape architect may be determined. He may be paid, as the architect usually is, a certain per cent of the cost of the work constructed in accordance with his plans, this per cent being greater if the reputation of the designer is great, if the work is exceptionally difficult and calls for unusual skill or application, if the work is small in cost; the per cent being less if the advice or plans be not complete, or perhaps if the work be not completely carried out, so that detailed supervision for finished construction is not called for. It is true that this method of charge appears to put before the landscape architect the temptation to increase the cost of the work so that his own profits may be increased. It is a tribute to the profession of landscape architecture and especially to the professions of architecture

* Cf. p. 332.

and engineering, where this method of charge is more general, that on the whole this method has proved satisfactory, and that the professional adviser has been willing to spend much effort in reducing the cost of the construction although thereby his own remuneration is correspondingly reduced.

The landscape architect may be paid a lump sum, determined beforehand, for all his services and expenses in relation to a certain piece of work. From the point of view of the client this gives the advantage of certainty, but it is likely to result in the landscape architect being underpaid. It is uncertain just what plans and directions and investigations will be necessary, even when the work to be constructed is known in advance with some exactness. If the landscape architect estimates liberally on these uncertainties, the payment which he asks for may seem too high. Moreover, every private client, as the work goes on, is very likely to see more clearly what the effect of the completed design will be, to become more interested in it, and to wish it carried out more expensively, or added to in various ways, and the additional work thus required of the landscape architect cannot easily be estimated in advance, or later determined and covered by an additional charge.

The landscape architect may be paid a stated fee plus his expenses. The fee is his remuneration for his reputation and for his personal skill and time employed on the work in question. The expenses are those of the landscape architect and of the assistants employed on the work, in the office and in the field, the expenses for materials, prints, traveling, subsistence charges when traveling, etc., and the reasonable share which the work should bear of the general office expenses, like rent, light, heat, etc., which cannot be directly charged to a particular client. In some offices these general expenses are about equal to the expenses for assistants' pay; but this will depend of course on the efficiency of the office and on whether the landscape architect himself, if he does drafting, charges for his own time as a draftsman.

Some landscape architects make separate charges for their services during the successive stages of the work, for instance: for preliminary visit; preliminary and general plans; grading and construction plans, specifications and estimates; planting plans and planting lists, esti-

mating and ordering plants; supervision of construction; supervision of planting. This enables the client, at any of these designated stages, to place the landscape architect's plans in the hands of some one else for execution or to cease to employ the landscape architect altogether. It enables the landscape architect, if he sets his price for each successive service only when this service is about to begin, to estimate the actual service required more closely. On the other hand, it is possible only roughly to determine under which head the professional assistance given should be classified. For instance, many decisions as to grading and planting must be made in preparing the preliminary plan.

In land subdivision work* it is a frequent practice for the landscape architect to fix his charge at so much per acre of land developed, for certain specified plans and service. This definiteness is particularly desirable from the client's point of view in these cases, and a landscape architect with experience in such work can determine rather closely in advance what his charges should be.

When the client is willing to put himself in the hands of his landscape architect, the charge may simply be determined by the landscape architect as what seems fair when the work is done. If the landscape architect is conscientious and his office is efficient, and no misunderstandings arise, this would be the best way, but usually some statement as to probable charges will save later embarrassment. When nothing is stated beforehand the courts would probably uphold a charge which was shown to be in accordance with the general custom of reputable practitioners in such a case.

Professional Reputation

Every landscape architect sets before himself the ideal of being widely known as a good practitioner. The only final firm basis on which such a reputation can rest is actual work well done and clients satisfied. It is evident, however, that the landscape architect must get the work to do before he can establish such a reputation, and this is the greatest problem which first confronts the young practitioner. Anything which he can do without loss of dignity or honesty to make himself known and professionally respected is desirable. He may advertise in certain acceptable ways. He may locate his office so that it is to be seen by people who might become clients, and so that he may mingle with such

* Cf. Chapter XI, p. 280.

people; he may furnish his office so that it proclaims him a man of taste and business efficiency. He may cultivate acquaintances, not only for the general broadening effect of wide acquaintanceship but for the definite professional use which his acquaintances may be to him, — his fellow practitioners through a mutual polishing of ideas, and people in general through their possibly becoming clients. He may lend his assistance to public enterprises, particularly in the field of city planning, for no pecuniary return or for a small one, considering that he is paid by the public service which he renders and also by the calling of his name to public attention in a desirable way. He may enter competitions, both to try his powers against those of his fellows, and for the public notice which any success would bring, quite as much as for the hope of any immediate pecuniary reward. He may join professional societies, that he may learn what other landscape architects are doing and, by contributing to the reputation of the profession at large, so promote his own.

Some of these activities are primarily for the young man; others will be kept up throughout a man's professional life. In any case they are but preliminary to getting work, and they will not of themselves enable a man to do good work. It is very rare that a reputation of any magnitude or permanence, or a landscape architect's business of any considerable size, rests on anything else than the good will of a succession of satisfied clients.*

Advertising and Publicity

Every landscape architect will have to decide whether or not it is desirable for him to seek publicity by any form of advertising in papers or magazines or otherwise. Such advertising as may come by writing books or articles in magazines or newspapers is certainly unobjectionable and may be desirable if the practitioner can spare the time and energy to do it. Descriptions of pieces of work, properly credited to their designers, are often printed in publications where they are of general or professional interest. Their advertising value to the practitioner is considerable, and little fault can be found with the designer for writing such articles, or allowing them to be written about his work, so long as they are honest descriptions, and not written more to

* Cf. the article by C. M. Robinson *Getting the Business* in *Landscape Architecture*, Apr. 1917. (See REFERENCES.)

increase the reputation of the designer than to spread a knowledge of design.

It is not desirable that a landscape architect should advertise his professional wares in the direct way that a merchant might adopt who had goods to sell. In the same way it is undesirable even to place a "card" in a magazine or newspaper with any self-laudatory remark; and indeed there is considerable feeling in the profession, as there is in the kindred profession of architecture, that it is undesirable to insert even a professional card with the landscape architect's address. There are two points which the landscape architect should consider in this matter: the effect of this advertising on his own professional standing and its effect upon the reputation of his profession generally.

"A society should discourage any one of its members from doing anything for his personal gain which would be a loss to the society at large. In the case of advertising by landscape architects such a loss would be most surely caused by any statement by an individual practitioner which would lead the public to believe that he was untrustworthy, or unduly money-seeking, or possessed of bad taste; because these would be cardinal faults in a landscape architect, and the public would inevitably judge the rest of the members of the society by what they knew of one.

"No one would deny that, from the point of view of the American Society of Landscape Architects, any individual advertisement was bad which made the practitioner out to be blatant and self-satisfied, or entirely commercial in his view of his profession. On the other hand, a dignified statement of undoubted facts as to the good work of a practitioner could do the Society no harm. But even such a statement sounds better when not made by the practitioner himself. A great difficulty in the case of the landscape architect lies here: that the primary qualification of a landscape architect is his good taste, and a man's own statement that he has good taste plainly bears little weight with any one else. It is this fact which has been largely the cause of so much writing and showing of pictures of completed work by architects, and, to a less degree, by landscape architects. This practice enables the practitioner to give the prospective client a chance to determine for himself whether he approves or not of the practitioner's taste." *

It is true that the public is not as yet sufficiently informed as to where to go to obtain the services of a skilled landscape architect. It

* From Editorial *The Ethics of Professional Advertising* written by H. V. Hubbard, in *Landscape Architecture*, Oct. 1916.

would be of general advantage if the names of practitioners of recognized skill were given more publicity. If a list of such men could be compiled and published, it would be a public service. There is, however, obviously no accepted authority which can determine which practitioners are skilled and which not. Any list of skilled practitioners would therefore be an affair of odious comparisons. It would be possible and unobjectionable, however, to publish lists of the members of the professional societies, or local chapters of societies, in any profession There are of course practitioners of ability who are not members of these societies. However, if the societies are at all worth while the great majority of the skilled practitioners would be members.

Professional Announcements

To avoid a great deal of repetition in correspondence and to set forth for the benefit of the client the general way in which the landscape architect does his work, most practitioners have some form of professional statement or circular in more or less detail which they may send to prospective clients to define as far as possible the relations which are to exist between the client and his professional adviser. A general statement of this kind is used by architects which has the sanction of the American Institute of Architects. The activities of the landscape architect are more varied and so more difficult to codify, but the American Society of Landscape Architects has issued such a general statement for the benefit of its members.*

Public Exhibitions

Public exhibitions of the work of landscape architects are valuable in two ways: they give the practitioner a chance to see what other practitioners are doing, and they give the public a chance to see something of the work of the profession as a whole. In both these ways, exhibitions jointly with architects, sculptors, and other artists, and with engineers and others concerned in city planning, are particularly desirable. In such exhibitions, the landscape architect, like the engineer but even to a greater degree, is at a serious disadvantage in the eyes of the public. A great deal of his work, however beautiful it may be in actual execution, is incapable of representation on plan in any way which would make it particularly decorative or intelligible to an untrained person, and perspective drawings or even photographs of informal and naturalistic design seldom make striking pictures and seldom convey the atmosphere of the original.

* See *Transactions*, 1922–26, p. 26 ff.

Competitions

Another way in which the young landscape architect may hope to get work and make himself known is by entering into the competitions for the design of various works of landscape architecture which are held from time to time. Because they give an opportunity to the untried man, they are in so far good, but as a means of choosing the best designer to carry out a certain piece of work they are often quite futile.* As we have seen, there are many ideas for landscape compositions which cannot be represented at all adequately by drawings. Even for a jury of skilled practitioners it is often very difficult to determine just what idea is represented by a given drawing and whether the idea would be good or bad in execution. Moreover, however much the competition drawings may show of the ingenuity and inspiration of the designer, they show little or nothing of his experience and ability in actual construction, and in the final working out of the design on the ground and its adjustment to the topography which is so largely responsible for the final effect in many kinds of landscape work. And, while the requirements in an architectural competition may be stated with considerable definiteness and understood in practically the same way by all the competitors, a landscape design, that of a small park, for instance, could be properly made only after detailed study of the local conditions, an amount of work which few men would undertake for as small a chance of reward as most competitions offer. The drawings submitted are thus likely to be superficial and based on insufficient knowledge. From the point of view, therefore, of the conservation of the energy of the competitors and the judges, and the saving of money to those financing the actual work, it would usually be better to seek competent assistance in the choice of a professional adviser and then allow this adviser to do his work assured from the beginning of reasonable remuneration.

Landscape Architect, Client, and Contractor

The landscape architect serves his client † in the following different ways. He finds out what the client desires in the way of landscape utility and beauty and he advises him how he may best obtain it. He works out in detail and records as far as possible in his plans and speci-

* Cf. the articles by C. D. Lay on competitions in *Landscape Architecture*, v. 3, 4, and 5.

† Cf. p. 338.

fications the construction which the client wishes to have undertaken. He acts as the agent of his client in making sure that the terms of the plans and contracts and specifications are made plain to the contractor * both before and especially during construction, and he also acts as an impartial arbiter between the client and the contractor to determine whether or not the work is done in accordance with the landscape architect's ideas as set forth in the contract.

Coöperation of Landscape Architect with other Practitioners

In this work the landscape architect must coöperate † with other professional advisers and with all concerned in bringing about the best final result. The thing in which the client is particularly interested is not the professional dignity nor the personal opinions of any of the people whom he employs, but merely the efficient completion of the work undertaken. When any designer is charged with carrying out so complex a scheme that the collaboration of another designer is necessary, the simplest arrangement is to call in this second designer as a consultant. The consultant supplies from his experience and skill information and suggestions for the consideration of the responsible designer, and looks over the whole work with a view to discovering any consideration in the design or any flaw in the execution which might have escaped the attention of the designer. The consultant is not responsible, however, for the perfect execution of the work. It is assumed that the designer is competent to do this, and he cannot be relieved of this responsibility without confusion.

Where one man is incapable of undertaking the general responsibility for the whole work in this way, two or more men may share this responsibility. Under these conditions, it is essential to fix some definite delimitation of the field within which each collaborator is entirely responsible. In the case of the private estate and similar work, the only clear delimitation is a territorial one. It is important, however, that each designer should serve as a consultant on the work of the other, and that there should be fixed upon both the joint responsibility for harmonizing the work as a whole. Such coöperation means that

* Cf. p. 344. † Part of the substance of this follows a paper by F. L. Olmsted, Jr., *Coöperation between Architect and Landscape Architect.* (See REFERENCES.) Cooperation among students of the Fine Arts is now promoted by the fellowships in landscape architecture at the American Academy in Rome. (See Transactions of the American Society of Landscape Architects.)

each designer shall be informed, at least in a general way, as to what the other is doing and means to do, and that each shall consult the other sufficiently in advance of the construction of any work so that the ideas of both shall be made as far as possible effective. Such collaboration requires tact, sympathetic insight, and mutual respect in the collaborators, and some men otherwise good designers are unfortunately incapable of serving a client in this way.

These two methods of coöperation among designers are much the most likely to prove successful. Of course there can be effective cooperation among the various assistants in a landscape architect's office, and some of the larger offices of architects, engineers, and landscape architects have assistants trained in these three fields. If the responsible designer is himself capable of appreciating and handling the work in its entirety, this is an excellent system of coöperation. If he is not, he is little better than a quack and an exploiter of other men's ability.

Coöperation in City Planning

The broadest field of professional activity in which the landscape architect finds himself most frequently in coöperation with practitioners from other professions is the field of city planning, where the landscape architect works in collaboration with engineer, architect, sociologist, economist, or lawyer. Here the delimitation of field cannot be territorial, but must be according to the subjects in which the various collaborators are severally skilled. It is therefore doubly important that each collaborator should appreciate the point of view of the others, and that all should have at least a sound fundamental conception of the subject of city planning as a whole.

Organization and Equipment of a Landscape Architect's Office

There are some landscape architects, especially among the younger men, as there are architects and engineers, who, so to speak, are their own office force; and indeed a great deal of good work is done by the man with a small practice who keeps all its details in his own mind; but for any considerable amount of professional work it is necessary that the landscape architect should have assistants, and that they should be good both in their own field and as parts of the office machine.

Clerical Force

Assistance may so frequently be found for the clerical work of an office at a fair price that a business would be small indeed which could not afford some assistance of this kind. This work is however extremely important to the efficiency of the whole organization. A

man is often judged by the appearance of his letters, but the time of the landscape architect spent in checking and correcting poor work of this kind is time wasted which should be applied to better purpose. The accuracy and availability of figures and accounts, the quickness with which records and data of all kinds are available, will be an absolutely essential factor in any quickness and efficiency of performance which the office may have as a whole.

Technical Office and Field Force

It seldom happens that the same man is equally good as designer and draftsman in an office and as superintendent and inspector on the ground, so in large offices there are usually some men who are principally indoor men, and others who are sent from job to job to see to the actual execution. This subdivision of effort is hardly possible with a small office force, and a complete separation of the two activities is not at all advisable. Considerable actual familiarity with construction is necessary to the development of an office assistant if he is to be anything more than a mere draftsman, and familiarity with design in all its phases is a great asset to a superintendent.

For good work it is extremely desirable that at least one person shall be familiar with the job from its beginning to its end. Proper filing of correspondence and recording of plans in the office and proper returning and filing of reports from the representative on the ground will give at any time a general idea of the state of the work; but there are endless details which will not get so recorded, and all kinds of knowledge of personal qualifications of those concerned in the work, which can be kept only in the head of some one who has personally followed the whole progress of the job.* In a small office this person would be the landscape architect himself; in a large office this necessity is likely to give rise to the custom of intrusting some one man with a number of pieces of work under the general supervision of the landscape architect, and expecting him to take such measures as he sees fit, and direct such subordinate members of the office force as are available in handling this work. Here arises a temptation to the busy landscape architect which would usually best not be yielded to, namely, when a new piece of work comes in, to turn it over at once to some responsible man to make alternative preliminary sketches to be judged by the landscape

* Cf. p. 341–342.

architect. If the landscape architect is a better critic than he is an artist, this may be his best way of working; but otherwise it would save much time and put more of the individuality of the landscape architect himself into his work, if he were to take time personally to master the general aspects of the job and himself to prepare sketches to be worked up by his office force.*

Since an assistant often works on several jobs in the same day, and since it is necessary to know how much expense for assistants' time is properly chargeable to each job, it is a common custom in landscape architects' offices to pay the assistants by the hour and to have them hand in daily or weekly a time-card showing how many hours they have worked on the various jobs with which they have been concerned. There will be a certain amount of time not chargeable to the client, and this is charged to the office and becomes a part of the undifferentiated expense like heat and rent.

Office Reference Material

The landscape architect files reference material for two reasons: because he cannot remember it all himself, and because, if he could, he could not spare time to explain it to his office force. The collections, then, are a sort of general office memory, and the ideal collections should work like a man's memory, giving the required information quickly and completely, no matter from what point of view it is sought. Any approach to this ideal will mean careful arrangement of the material according to some definite system, which should be as simple, and therefore as generally usable by the office force, as the mass of the data will allow.

The material to be arranged is of two kinds: that pertaining to particular clients and that for general reference. Under the first head are plans, planting lists, contracts and specifications, estimate books, reports of visits, photographs, and so on. Under the second are photographs of general interest, trade catalogues including nursery catalogues, perhaps samples of materials, — brick, tile, garden pottery, and so on, — pamphlets, portfolios of plates, books, magazines, and maps. The amount of material kept in the landscape architect's office will depend to some extent on the value and availability of other collections in public libraries or similar places of reference, but most of the

* Cf. p. 340–341.

information wanted is wanted at once, and some collection for ready reference is almost always necessary.

For a fuller discussion of this subject see *The Arrangement of the Professional Collections of a Landscape Architect.** A comprehensive scheme of classification of the subject of landscape architecture which is intended for the detailed arrangement of such material in libraries, schools, and professional offices has been published.† The most detailed discussion of office forms and office practice will be found in the series of *Landscape Construction Notes.*‡

* Article by Henry V. Hubbard and Theodora Kimball in *Landscape Architecture*, Jan. 1913, v. 3, p. 76–89. † Prepared by same authors, published by the Harvard University Press, 1920.

‡ In *Landscape Architecture*, Jan. and Apr. 1929, v. 19, by A. D. Taylor.



Part II

NOTES ON PROCEDURE IN DESIGN

The client — Topographic data — Design — Representation of design — Models — Pictures and plans — Written statements — Verbal directions and explanations — Series of drawings for a landscape job — An example of representation of design: presentation of landscape plans — Superintendence: of construction — Of maintenance.

The landscape architect starting upon a new design — of a private estate for instance — has first to familiarize himself with two important governing circumstances: the client, his means, mode of life, personality, and desires; and the location, its shape, topography, soil, exposure, vegetation, and all the thousand physical characteristics which will make certain kinds of design desirable and others impossible.

The Client

The landscape architect should remember that he is seldom called in primarily to express his own ideas, but rather to interpret and express the client's half-formed desires in a way which the client has neither the artistic training nor the technical skill to do for himself.* The client is likely to be uncommunicative at first as to the amount he is willing to spend, or perhaps to set as a limit a smaller sum than that which he really would devote to the construction if he were convinced it were what he actually desired. The client is unlikely, without some persuasion, to discuss at much length the customs and particular requirements of his family; in fact he often will not realize the effect these should have upon the design. It often happens moreover that the client means to take up on his new property a more expensive mode of life than that to which he has been before accustomed, and he does not himself know what his future desires will be. It is very important, therefore, that the landscape architect should familiarize him-

* Cf. Chapter II, p. 15–16 and Chapter VI, p. 86.

self as far as he may with his client and with the ground before he gets far with his design, for his design should be before all things a reasoned meeting of a definite problem, and not a scheme conceived in one style and for one purpose and then mutilated or stultified to fit another.

Topographic Data

On his first visit to the ground the landscape architect may make notes enough of existing conditions to enable him to produce some kind of preliminary sketches for discussion with his client. If the work is at a considerable distance from his office and he has but little time on the ground, a rough sketch of the topography, perhaps merely from paced measurements of the principal dimensions, but accompanied by photographs of more important features taken from places designated on the sketch, may be sufficient data. At the same time, however, the landscape architect should note such features as must later be very accurately located on account of their importance in the design. If the work is to go ahead, it will be desirable, on a topography of any complication, to have a topographic map prepared showing boundaries, buildings, fences and walls, roads and paths, trees where they will affect the design, and the elevations and modelings of the surface of the ground, particularly in those places where this surface is likely to be changed by the new construction. This topographic map may be made by a civil engineer, or it may be done, in smaller work, by the office of the landscape architect. In large work an engineer would usually best be employed, because this is his professional business and he will be likely to do it better and more cheaply than the landscape architect can do it. The advantage of having a topographic map made by the landscape architect's office is that some one in the office in this way acquires a detailed familiarity with the ground which will be very useful in subsequent design. In any case, the landscape architect should inform the maker of the topographic map as to what landscape features must be recorded accurately and what may be neglected. Otherwise much labor may be wasted in acquiring data that are never used. If there is any doubt as to the use of the data, however, it is much better to err on the side of getting too much rather than too little. Special pains should be taken to record such things as the existence and elevation of cellar windows and areas, where there is a building, the elevation of the ground at the tops and bottoms of steps

and so on, and the kind, diameter, spread, and condition of trees, and the elevation of the ground at their foot. These surveys may be greatly added to by photographs, and if the exact locations from which the photographs were taken are recorded, further objects may be located upon the survey, or an entire location survey of recognizable objects may be made by measurements taken from these photographs.*

Design

Having familiarized himself as far as possible with what his client's desires are and are likely to be, and with the governing circumstances under which these desires must be met, the landscape architect proceeds to his design. If he means to do his work quickly and efficiently, and so that when he has brought it to an end he may feel reasonably sure that he has done the best that he is capable of under the circumstances, he must make his decisions in the design in some sequential and orderly way. This does not mean that he should have some stereotyped, mechanical method of approach to his problem, but it does mean that he should not make his designing simply a matter of inspiration.

He should first accept those restrictions of topography, of necessary dimensions for use, of necessary limit of expense, which he finds imposed, and let them in so far shape his solution for him. He should then decide the fundamental questions of choice of style, choice of main units for use and beauty to be included in the design, and perhaps such important things as house location and orientation.† It is very likely that at this point a number of different alternatives will be possible. The designer should determine which of these alternatives are worth further consideration, and then, taking the essential characteristics of each alternative, put it into sketch form, carrying it no further than is necessary for its comparison with other alternatives in respect to the fundamental factors which are, so far, the only ones being considered. It is commonly much better to produce a series of

* With the progress in aëronautics and the extensive use of the camera from military aircraft, the interest in this form of surveying has increased and will doubtless give rise to a literature in English on the subject more up-to-date than Lieut. Henry A. Reed's *Photography as applied to Surveying*, 1888, or the chapters in general books on topographic surveying.

† Cf. The Estate, Chapter XI, p. 253.

sketches, than to erase one sketch to supplant it by another on the same sheet, for even though an alternative be thrown away on account of some insuperable objection, still it may suggest an excellence in some other respect which may be incorporated in the solution finally adopted. If it is possible to get the client's coöperation in the design and his acceptance of a rough sketch at this point, it is very desirable. It should be remembered, however, that the client is probably less used than is the landscape architect to making decisions among possibilities of this kind, and that the submission of too many alternative schemes may cause in his mind present confusion and future regret over incongruous excellences foregone.

Having determined the main outlines of the design, a similar process may be applied in the decisions as to the details of the parts. At this point, if not before, the ordinary busy practitioner turns the work over to an assistant and contents himself thereafter with the function of critic, or of designer of such smaller things as are of particular importance or which particularly appeal to him. In all this matter of design, the landscape architect should have a feeling towards his work much like that of the modeler towards his plastic clay. The landscape architect draws lines on paper, but in his mind's eye he sees the ground, and the houses and trees and roads, and other three-dimensioned objects upon it, and as he makes and compares and discards his alternative sketches, he is in his imagination first arranging his design in simple and somewhat formless masses, next determining the main outlines and parts of these masses, and then and not till then dealing with the subordinate beauties and intricacies of detail, which if they were sooner brought into being might be discarded and utterly wasted with the discarding of some larger mass which they adorn.

It is one thing to determine on a good design; it is another thing to record this design on paper, and then to bring it into actual realization on the ground. There are many conclusions which cannot be recorded, indeed which cannot be reached until they are wrought out on the ground under the personal direction of the designer.* The architect can represent his design with considerable accuracy by drawings, nevertheless architectural superintendence requires many decisions

* Cf. Superintendence of Construction and of Maintenance, p. 351–353.

which are the work of an artist. Still more must the superintendence of landscape design require designing skill, and properly the skill of some one who has been familiar with the design from its inception, and has in his mind therefore, as things to be attempted in the finished work, a multitude of excellences which have been nowhere else recorded. This is one of the reasons why a young landscape architect who follows his own work from start to finish may well be more successful on a small job, as we have said, than a large office would be, however experienced, where the work is passed from hand to hand. Still, as far as it is possible, definite record of the determined design must be made.

Representation of Design

Like the architect, but unlike the painter and the sculptor, the landscape architect is obliged to have the actual work, which bears his name as designer, executed by other hands; he has therefore to represent the design in some way before the real construction begins. He has to convey his idea of the completed work first to his client, and then, after acceptance by him, to the contractor. And as the work of execution takes time, there must be a fairly permanent record of most of the proposed work, which shall serve as a source of information about the landscape architect's idea to the client and to the contractor or whoever executes the work.

In actual practice this means of conveyance and record takes four forms: — models, more or less accurate three-dimensional representations of the thing proposed, at some convenient reduced scale; pictures, namely, perspectives, elevations, plans, sections; written words, for instance, reports and specifications; and spoken words, explanations to the client, directions on the ground, and so on. Each form of expression has its own advantages, each can do what no other can; but each has its own disadvantages — it does too little or too much.

Models

The model * has the great advantage that it gives all the different aspects of the design, — its appearance from any point of view, its elevation as well as its plan, and to some extent even its color and texture. But if the model is to do all this, it must be very well executed: consistency of scale, even reasonable representation of texture, is hard to

* See article by G. C. Curtis, *Landscape in Relief*, in *Landscape Architecture*, Jan. 1913, v. 3, p. 49–58, with illustrations.

get, and the very actuality of the model tends to make its faults the more noticeable and its misrepresentations the more misleading. A model is intelligible to many who cannot understand a plan, and is indeed to the mind of almost any one more definite and concrete than a drawing. It has a place therefore which no other method of representation can fill, but its cost and the difficulty of transporting it tend greatly to restrict its use.

Pictures and Plans

Pictures are much cheaper than models. They have the advantage of stating at once, if not all the spacial relations, at least all those in the chosen plane. If properly done, a picture shows not only relations designed to occur, but relations indirectly caused by the directly determined design. This, of course, is the greatest advantage of pictorial representation in study. Like the model, it shows not only whether the ideas decided on are good, but it shows also what results arise from these decisions. Further, like the model, it allows the client to follow any sequence of relation he pleases, and to look at the things presented in any order he chooses. It has the disadvantage that it is more definite than it is always desired to be, and so leads to misunderstandings, — for example, a triangle, if drawn, must be isosceles or scalene or whatever the draftsman draws it, whereas all he may mean to pledge himself to is, perhaps, that it shall have three angles and straight sides. Again, pictorial representation attracts attention to the picture, to the means of expression, — more attention than verbal representation commonly attracts to the words. This is presumably because we are more familiar with written and spoken words than with drawings as a means of expression; so with speech we notice the sense, not the diction, but with a drawing we are apt to notice the picture rather than the thing portrayed. It is often inadvisable that the client's attention should be directed primarily to the drawing as such, for it distracts his attention from the thing expressed, particularly since the appearance of the drawing often cannot at all adequately represent the appearance of the executed design.

Written Statements

Words can show reasons, that is abstract, non-visual relations. Words are sequential, and cannot show everything at once. We run a risk here of losing the attention of our client before he gets our point, but we have the advantage that the client must follow our sequence

of thought, not his own, as he may do with a plan, and we can put the emphasis where we please more readily than we can in a drawing. The writing of a landscape architect, like all of his work, should be a work of art. He should determine, as in all designs, what ideas he has to convey, what their relative importance is, what form of expression is suited to their presentation. Perhaps a plain statement of the facts is best, perhaps a tabulation of figures, perhaps a simile, perhaps a colloquial or chatty description like a letter. Often the final record of the design will take the form of a plan or other pictorial presentation accompanied by a report or written discussion for the benefit of the client and a legally-drawn contract and specifications for the guidance of the contractor. We should put on the plan the visual relations best shown by plan, and put in the report the reasons, the unseen relations of our subject. It is a common mistake to write as a report merely a description of what is shown on the plan.

In writing specifications to form a part of the contract, — the legal covenant between the owner and the contractor, designating what shall be done and how it shall be paid for, — it should be considered that if the interpretation of the specifications comes before the courts for decision, they will endeavor to determine what was actually in the minds of the parties at the time the contract was made, and that the more logically the statements are arranged, and the clearer the diction is, the less difficulty will there be. But it should also be remembered that recourse to courts of law should be avoided if it is in any way possible, and that for this reason also, the simpler the language is and the more capable of being understood by an ordinary man, the better it will be for its purpose. Speaking generally, it is reasonable to say that those clauses which set forth the legal relations contemplated between the various parties to the contract should be in a definite and more or less stereotyped legal form,* but those clauses which describe the work to be done in detail should be written in everyday language to be understood without mistake by the contractor.

* Refer to J. B. Johnson's *Engineering Contracts and Specifications*, a convenient compilation of the laws on the subject for the layman. The examples are drawn from the field of engineering and are applicable only with modifications to the specifications of the landscape architect.

Verbal Directions and Explanations

Spoken words have perhaps their greatest use in modifying general ideas for the particular case, in amplifying and explaining to the client the meaning of written statements and drawings, and in directing the workmen on the ground. Spoken words have the advantage that they enable us to modify and repeat our statements until they are understood. They suit the exact moment, but they are not permanent. If they can be remembered and legally proved by witnesses, verbal promises are of course in many cases as binding as written contracts, but the obvious difficulties in this regard make it best to reduce to writing almost anything which is worth remembering exactly.

Series of Drawings for a Landscape Job

In the ordinary practice of the landscape architect, for the complete carrying out of a job a fairly definite series of drawings will be necessary, and for practical reasons the manner of presentation of plans of the same kind will be more or less similar throughout the practice of any one office. The first conception of the design may be presented as a preliminary plan or as a perspective sketch, something intended to be attractive in appearance and to convince the client of the excellence and beauty of the scheme. When the ideas expressed in this way have been modified and accepted in conference with the client, there may follow a general plan setting forth the complete idea in its general aspects more definitely, and perhaps a series of detail plans showing certain portions of the design still more fully at a larger scale. For use in construction there will probably be a grading plan based upon the topographic map and showing what changes are intended to be made in the surface of the ground, together with the location and general form of such constructions as are planned, — roads, walks, walls, buildings, planting beds, and so on. Accompanying this representation of the grading on plan, there will usually be profiles of the roads, perhaps also of the paths, and cross-sections, showing more accurately than the plan can do certain vertical relations of the proposed design. Then there will be a planting plan, accompanied by planting lists, showing again the location and shapes of the planting beds and the number and kind of plants which are to be used. In a design of greater size, complication, and importance, there will be more grading plans and planting plans, perhaps at larger scale, or accompanied by detail plans for certain portions.

The methods of making these plans, so that they shall be most efficient and convenient when used in carrying out the work which they represent, are matters of technical procedure for which we have not space here; but we give a series of examples of such drawings (Drawings XXXVI to XL) — all representing a piece of work which has actually been constructed — to give some idea of their relations one to another and of reasonable technical excellence in their preparation.

An Example of Representation of Design: Presentation of Landscape Plans

We will discuss further only one aspect of this subject, the beauty and the intelligibility of the presentation of our design by landscape plans. Many of the more general considerations pertaining to the presentation of plans will have also an application to the rest of the field of expression. The questions of the choice of different mediums, pencil, pen and ink, pastel, and so on, and the technical questions of the different methods of reproduction of drawings by direct contact printing and by reduction for published illustrations, are also matters for which there is no room in this book.

A drawing is, as we have said, merely one way of conveying an idea; and the drawing, like the written and the spoken words, should be suited not only to the subject treated but to the person addressed. The plain man who knows nothing about art may be best convinced by a maplike plan, a simple line elevation; the person of artistic temperament, who does not care for practical detail, may be best approached with a colored perspective; that is, we may emphasize in the presentation those qualities of the design which we think will appeal to our client. We should remember, too, that the client is judging not only the design, but the designer, and a pretentious rendering might be as unfortunate a start with a hard-headed business man as a quotation from Tennyson would be.

There are always two distinct purposes which will influence the choice of a method of presentation of plans. First, to record the ideas which are to be embodied in the proposed constructions, and, second, to make an attractive sheet. Sometimes the first object is greatly dominant, for instance, in grading plans. The beauty to be sought here is such beauty only as is consonant with their use as construction drawings: the beauty of accurate clean drafting, good curves, plain legible consistent lettering, consistent quality of line, and pleasant arrange-

ment of the drawing inside of border lines, where this is possible without loss of clearness. All plans made by an artist should have artistic quality. The good artist will strive for an appropriate quality, and in these construction plans he will find only these simple kinds of beauty appropriate.

Often both the record of the idea and the beauty of the sheet are important, as in the case of preliminary plans, perspectives, and so on, for the client. Such drawings are commonly concerned not with final small details, often not with accurate presentation of details at all — these being not at the time decided — but rather with a presentation of the scheme as a whole, and with conveying to the client the idea that the scheme will be beautiful when executed. The attractiveness of the scheme is inevitably judged somewhat by the attractiveness of the presentation, whether it be perspective or plan, or whatever else. Also the general artistic ability of the designer is judged by the presentation, and through this, again, the attractiveness of the proposed result. The client may say to himself: "He must be an artist to produce a drawing like that; if he is an artist, he can make the final result look well."

Now, especially in landscape architecture, a drawing or a design, faithfully representing something which if constructed would be beautiful, is not therefore necessarily itself beautiful. The construction is to be seen in perspective, in three dimensions. The drawing may be — usually is — a plan; and the appearance of the plan often bears little more resemblance to the construction itself than does the appearance of a page of written description to the thing described. There is therefore always a problem of compromise between the meaning and the appearance of the drawing. The landscape architect must express on his plan the various elements of the design in their relations, so that things of dominant importance in reality shall appear so in plan, and those of less importance shall appear similarly with their proper emphasis. Things related in reality should look so on plan. Things of similar appearance in reality should look so on plan. And this must be done in such a way that the resultant sheet shall be in itself decorative, as a piece of composition in line or color, just as a Persian rug is decorative, without any reference to its meaning.

To do all this, we plainly must be able to make things as shown on plan look similar or different, or dominant or subordinate, by some means other than their size and shape, for these are fixed by the size and shape of the objects represented, and merely to represent these objects accurately to scale may not place them in their true relative importance.

To express these differences on a flat plan we must depend on the variations which we can play on the character of the line in our drawing, and on the value, color, and intensity of color of the areas on plan.* But we must not in doing this come to the end of our control of the effect of our drawing; that is, it must still be possible by proper management of character of line, of value, color, intensity of color — any, or all of these — to produce unity of appearance in the drawing. Which of these characteristics of our drawing we shall turn to account principally in expressing our idea of the completed construction, and which of the characteristics we shall use chiefly in beautifying the drawing itself, is a new problem in each case.

In general, differentiation of objects is best expressed by color of area and character of line, for with these we can represent the various characteristics of objects: size, shape, texture, and color. Houses, fences, walls, steps, and other architectural constructions may be represented by ruled lines. Roads, where their form or flow of curve is to be emphasized, may be drawn in definite line by the aid of a French curve. Trees, shrubbery, and herbaceous plants may be represented in their loose and indefinite texture by a crumbly or otherwise indefinite freehand line, usually with a specific difference in its irregularity, in scale with the plants represented in each case. Roads, paths, and other things may be shown by an indefinite line, when not designed to be self-assertive in their effect, or in some cases when not definitely decided on as to form or location. In construction plans, the difference between the freehand and the ruled lines may represent the difference between existing and proposed objects or surfaces.

A consistent use of one kind of line suggesting the loose texture of foliage growth, and one general color — usually suggesting green — to represent trees, in connection with another character of line and an-

* Cf. Chapter VII, p. 106.

other color not very different, representing shrubs, and perhaps a third kind of line and more brilliant colors, representing herbaceous plants in flower, will give simplicity and unity to each planting area, mark the difference between plants and other objects, and still not preclude unity of appearance of the whole plan.

Lettering designating the various objects on the plan makes another element of line in the composition. In an informal plan, with much foliage, where the incidental lettering is not to be conspicuous, free-hand lettering drawn with a somewhat irregular line may be desirable for its consistency of texture with the plan. If the lettering is to stand out importantly, or if the whole plan is largely composed of ruled lines, a constructed letter will probably be the better choice.

There is a wide range of possibility in the use of color on plan. There is always a temptation to try to represent the actual colors of the objects portrayed, to suggest the brightness of the flowers and the sunshine, but this is commonly a temptation which would best not be yielded to very far. Very vivid color is hard to handle and keep in accord. There is a great danger of a garish and inharmonious result, and even if this danger be avoided, so much attention would be attracted to the color as to detract from the effect of the plan as representing the proposed construction.

Moreover, the landscape forms with which we are dealing are not capable of accurate representation on plan. The whole drawing is arbitrary and conventional at best, particularly at the larger scales, and too great verisimilitude of color, too great an attempt to approximate a birdseye view, is likely not to offset but to betray the necessarily conventional form. This is especially the case when buildings are shown in ground-floor plan on a landscape drawing. The more convincingly the trees are rendered, the more incongruous does the flat house-plan become. The frequent overlapping of the branches of trees with paths, buildings, and so on, makes some arbitrary method of drafting necessary, if both tree and path are to be shown, and this fact renders lifelike coloring undesirable. If the whole drawing is at small scale, and is practically a birdseye view, bright colors may succeed; otherwise, the chances are in favor of a more subdued rendering.

In making the plan itself a decorative object, we have two form

factors which we can control: first, which side up we shall put the plan and how we shall arrange the border line; second, what we shall have for a title, scale, north-point, and explanatory notes, and where we shall put them.

There are various considerations determining which side up we shall put our plan. The north-point is more intelligible if pointing up, as on ordinary maps. On the other hand, heavy masses, interesting things, are commonly better towards the top rather than towards the bottom of a plan, if they must be in one or the other place. If there is a balanced relation of parts about one axis only, on the plan, this relation will be most effective if its axis be vertical.

The border line should leave as little unbalanced space inside it as possible; that is, the rectangular shape of the border line should fit the shape of the lot, or whatever the total object is, — or rather it should fit the lot, title, scale, north-point, and anything else there may be on the plan, considered all as one composition.

The important straight lines of the plan should run parallel to the border lines. These lines may be of two kinds: lines of some important interior mass, for example, a building group; or boundary lines of the total area treated. If a formal building group is the dominant factor in the design, it may often best be oriented with its main axes parallel with the border lines; the boundary lines of the lot, or other lines not parallel to this system, being subdued with color which makes no great contrast between the areas within and without the boundary. The important side of the dominant object — for example, the main façade of the house, or the entrance to the estate — is commonly best towards the bottom of the plan. This is especially true if the plan is large and is to be laid on a table to be looked at. Then the main line of sight is upwards in the middle of the plan, and the most important line of sight on the ground should, if possible, be represented on this line.

If shadows are indicated on the plan, they should come from a point of the compass where it is possible for the sun to be; else the plan is not truthful as to what areas are sunny and what shady, an important point in the design.

On plan, however, it is customary to have the light coming diago-

nally down from the upper left-hand corner. This is so common a convention that any other direction, except perhaps out of the upper right-hand corner, may look strange, so it is well, if it can be done without contravening some other considerations, to arrange the plan accordingly.

The composition can be improved, inside the border line, by properly composing such extra elements as can be added, — for instance, the title, the north-point, and notes concerning the plan. As these can be made of various forms, they can be adapted to the spaces left over between the plan and the border line. They are, however, all things made of lines, not masses, and therefore have a limited use. One reason for putting a title into a "cartouche" is that this makes the title a mass in the resultant design. A properly spaced and composed block of lettering will, however, fill a space as a recognizable tone when seen from a distance, even if it is not surrounded by a boundary line. It is commonly desirable to have it serve in this way.

Though the various esthetic effects which we have just discussed are always worth striving for in a landscape plan, in actual professional work another consideration enters in: the desirability of uniformity in plans of the same kind, the establishment of an office practice in presentation, the choice of a method which shall be rapid and simple, and thus inexpensive and easily learned. This stereotyping of presentation is certainly a good thing in such drawings as grading plans, but for preliminary sketches or any drawings where the esthetic effect of the plan itself is an important consideration, it should not be much encouraged.

Superintendence of Construction

In our state of society the accepted and almost inevitable way in which landscape work is actually constructed is that the contractor shall, for a stipulated payment, undertake the financial responsibility for the construction, and furnish the labor and executive ability to carry it out. The lack of artistic skill among those concerned in landscape construction cannot fairly be called the fault of the contractor. He is a business man, and could hardly be expected to be also a designer. Some landscape contractors have work enough to afford to keep in their employ superintendents and even workmen of real artistic skill, but most men who have artistic perception prefer to exercise it as de-

signers or draftsmen rather than in the actual operations of grading, planting, masonry construction, and so on.

Still it is vitally necessary for the success and reputation of the landscape architect that those things which require skill and appreciation during their final construction should be intrusted to skilled workmen, while, as a matter of business, the total work of construction should be so organized that at the same time the unskilled labor may be employed at those straightforward and simple things at which it is efficient. From the point of view of the proper utilization of labor of different kinds to a definite end, any experienced landscape contractor might be presumed to be sufficiently competent, or at any rate, the contract may be so drawn, that if he is not, the loss is largely his. From the point of view of esthetic effect, however, as we have seen, there are very few landscape contractors whose own perceptions can be trusted far. Since it is utterly impossible in a great deal of landscape work so to draw plans and specifications that a certain definite esthetic effect will be the result of their mechanical execution, it is necessary for the landscape architect to have some one on the ground, whose esthetic appreciation, guided by the plans, will enable him properly to understand the result desired, and whose practical experience will tell him what allowances and modifications should be made on account of the particular local conditions. It often happens that the superintendent from the landscape architect's office actually himself organizes and directs the work of planting, if indeed he does not do some of the setting out of the plants with his own hands. In the same way he probably will personally direct any difficult modulation of the surface of the ground in grading, because in no other way can he convey his ideas accurately enough to get the result which is desired. It is usually possible in consultation with the contractor, to arrange the work so that this expert superintendence will not be required at all times, but it is quite impossible to forestall the chance of its being required at any time. If the landscape architect really means to do the best his circumstances allow on any given job, he must provide for this expert superintendence or at least for its availability at short notice constantly from the beginning to the end of the work. If the landscape architect does all this superintending himself, it is plain that he cannot carry on

many jobs at the same time. If he has work of importance in widely scattered localities, he must have a resident superintendent on each job, at least during certain periods in the construction. The landscape architect is fortunate who has his work come to him in such a way that this superintendence may be distributed throughout the year, or who has so versatile a corps of assistants that they can turn their hand to drafting or superintendence as the work may demand.*

It is evident that the amount of detail that is expressed on plan and committed to writing, and the amount of detail which is left to be determined by the superintendent, depends on the possibility of deciding on this detail definitely beforehand, and on the capacity of the superintendent. In France and to some extent in England, a landscape architect's office is likely to make fewer and less definite plans than we do, and to trust more to skilled superintendence. When the growth of the profession in this country has produced more contractors skilled in this particular kind of work, and more men qualified to serve the landscape architect as skilled superintendents, the problem of the execution of work may be somewhat simplified, but it will always be true that if the landscape architect wishes to see his ideas fully realized in execution, he must to some degree superintend this execution himself.

Superintendence of Maintenance

Very rarely is the landscape architect's work such that it produces the effect he desires when the work of construction and planting called for in the contract is finished. The growth of trees and flowers and turf must still be awaited before the result is complete, and skilled superintendence will still be necessary to guide this growth to the desired end. It is an excellent arrangement, therefore, if it can be provided that the landscape architect be retained by the client to watch over the work, at least until such time as the idea of the designer has so nearly reached its full expression that the client may thoroughly grasp it and be perhaps trusted to see that this expression is not thereafter destroyed. If, as is the case in public work, there is no one owner who can thus be trusted, it is vitally necessary that the esthetic ability to appreciate the design and the enthusiasm to maintain it should continually reside in some responsible hands.

* Cf. p. 335.

DRAWINGS TO ACCOMPANY APPENDIX, PART II

Typical Drawings for a Landscape Job: Plans for the Development of a Suburban Estate

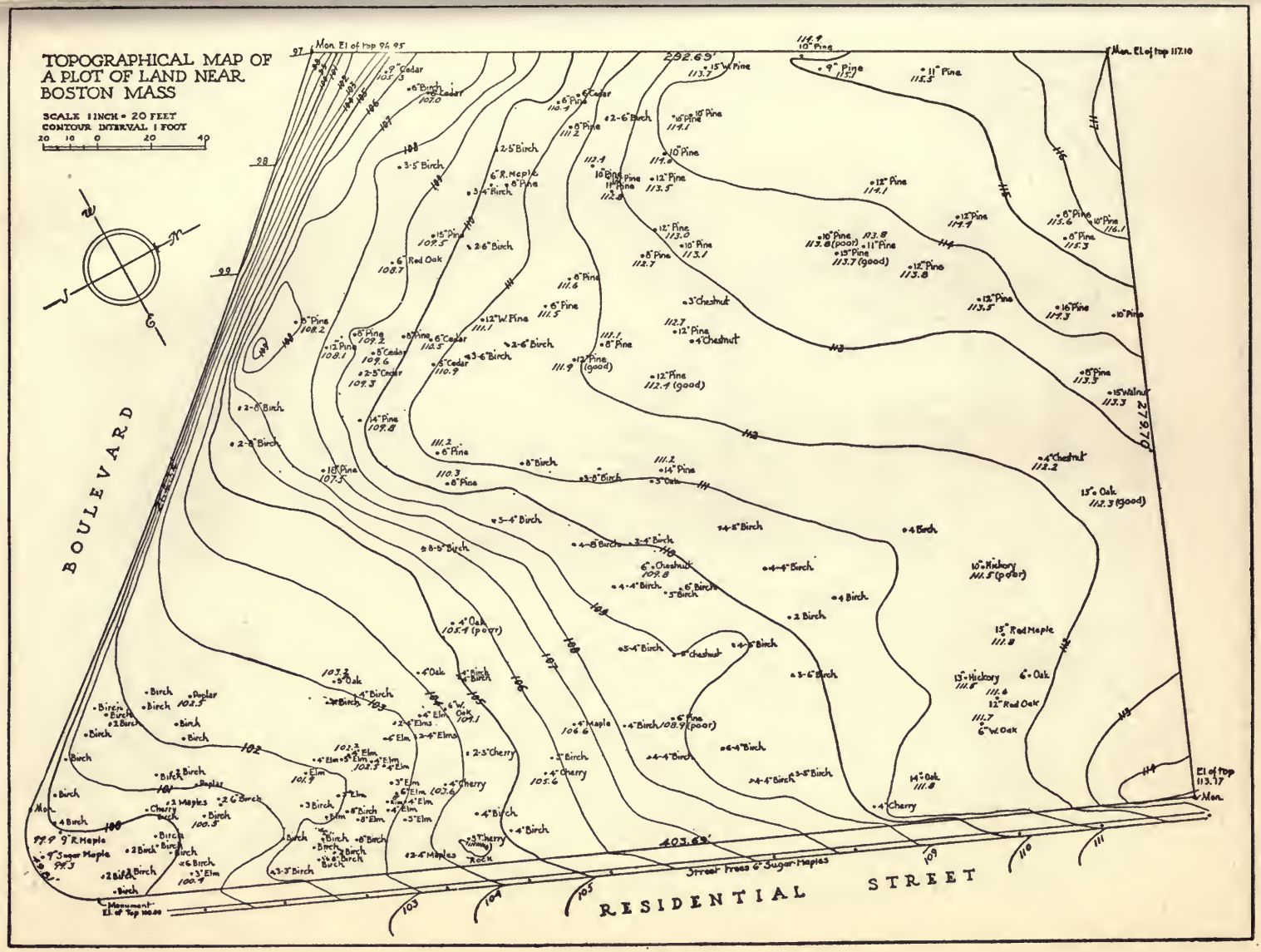
While these plans, with the exception of Drawing XXXVII, have been re-drawn in order that the figures upon them may be legible at the reduced scale at which they are shown, they are otherwise such drawings as might be prepared in the office of a reasonably efficient landscape architect during the progress of a piece of work of this kind.

In many cases it would be desirable, where the topographic map was prepared from elevations taken on the corners of cross-section squares, to show these points with their elevations on the topographic map for greater accuracy. In this case, however, the contours, together with the elevations of the ground at the foot of every tree — which were given on the original map — were sufficient for the use of the designer. Further detail in regard to the boulevard would have been given if it had not been certain from the first that there would be no road entrance on this side of the property.

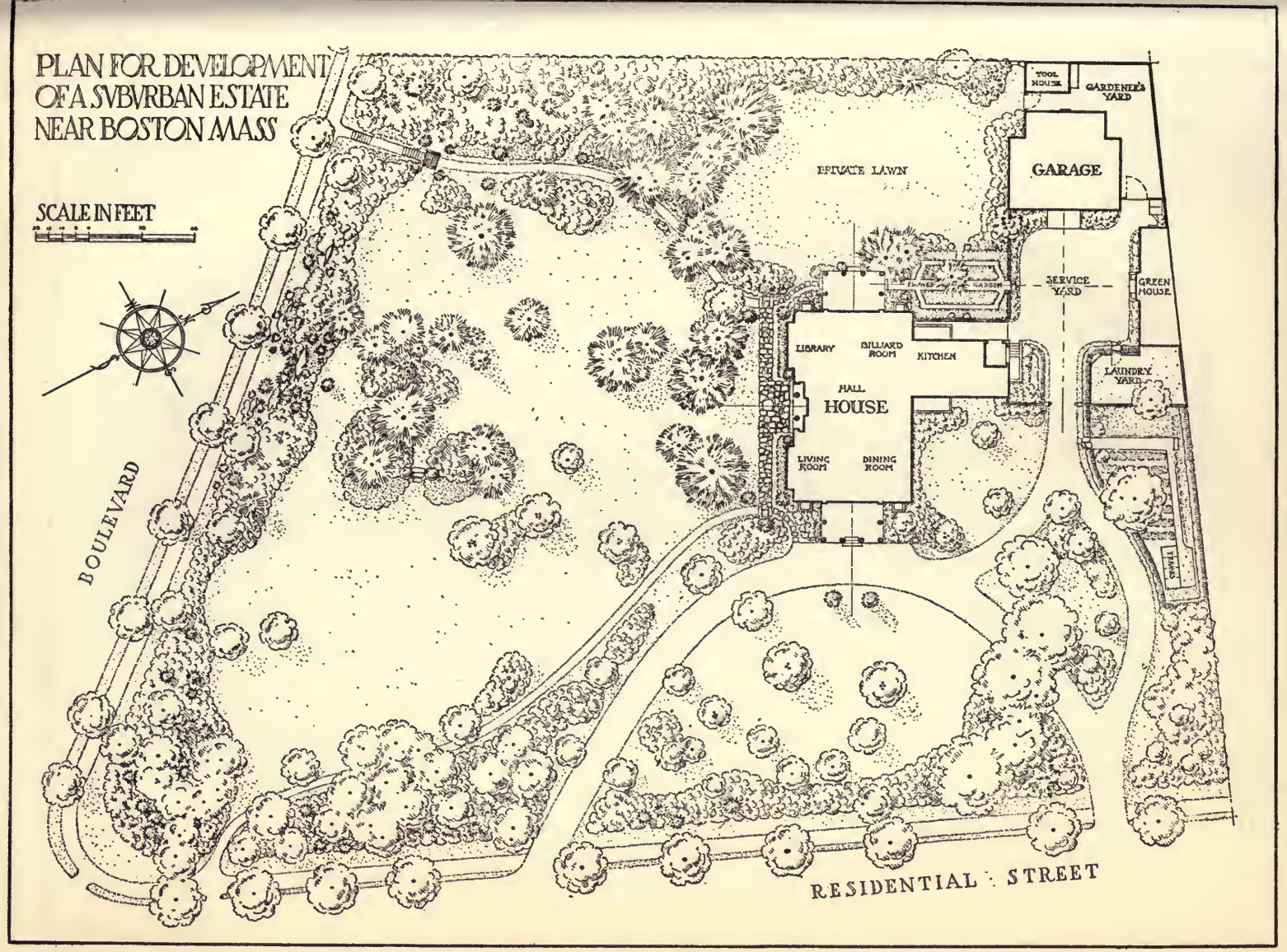
The grading plan with its accompanying profile would be used directly, in connection with the specifications and the interpretation of these by the representative of the landscape architect on the ground, in the grading, removal of trees and shrubs, preparation of the soil, construction of roads and paths, arrangements for drainage, water-supply, and lighting of the grounds, and similar items of the construction. In the case of smaller or more definite and detailed things, like buildings and steps, bird bath, walls, arches, arrangement of paths in the flower garden, special paving in patterns, and so on, the grading plan shows the location and general proportions of these constructions; but special detailed plans at larger scale (no examples of which are given in this book) would be followed in their actual execution.

The planting plan shows the number of plants to be used, and in a general way their proposed locations on the ground. The planting in definite small areas, formal or informal, like the flower garden, the vicinity of the bird bath, the steps to the boulevard, would be shown in more detail on the planting plans at larger scale. The actual arrangement of the plants, however, the blending of one plant group into another, the whole study of the detailed relation of the plants to produce exactly the effect desired, under the particular local circumstances as they develop and with the particular stock as it is delivered from the nursery, all this is a matter of judgment in design on the part of the superintendent, and cannot be recorded on plan.

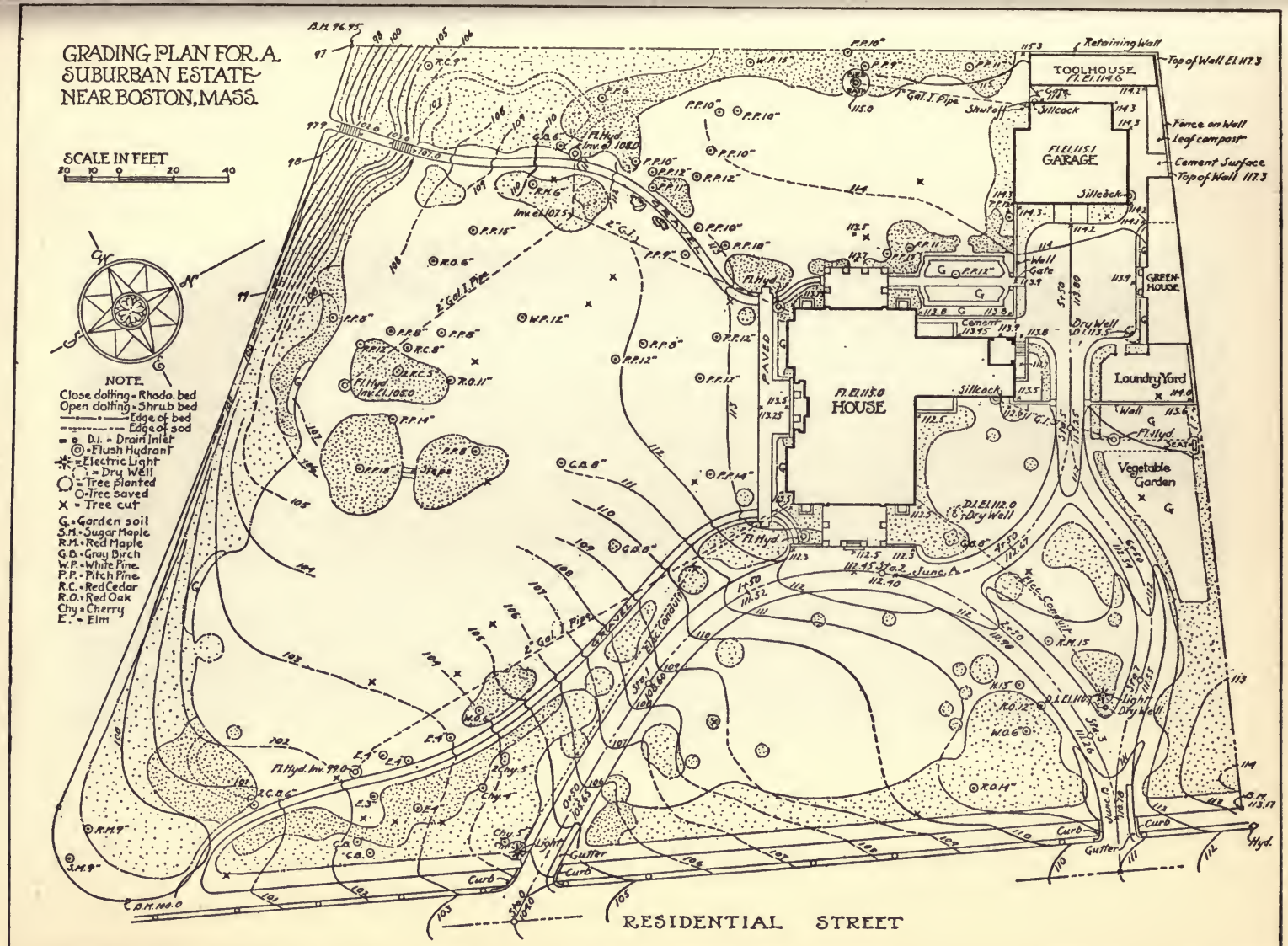
The planting list which accompanies the planting plan is not in the form in which it would be if it were to be used in an actual piece of work handled by a landscape architect's office. A list so used would ordinarily show the kinds of plants, the quantity of plants in each bed, the total quantity of each kind of plant, the spacing, the size and condition, the nursery at which the stock was obtained, the unit price, and the total cost, together with such notes as would be of further use in ordering the plants and in setting them out. In connection with the plan the list herewith, showing only the kinds of plants, gives, for what they may be worth, the ideas of one designer as to certain effects in planting as they worked out in this instance under the local conditions.



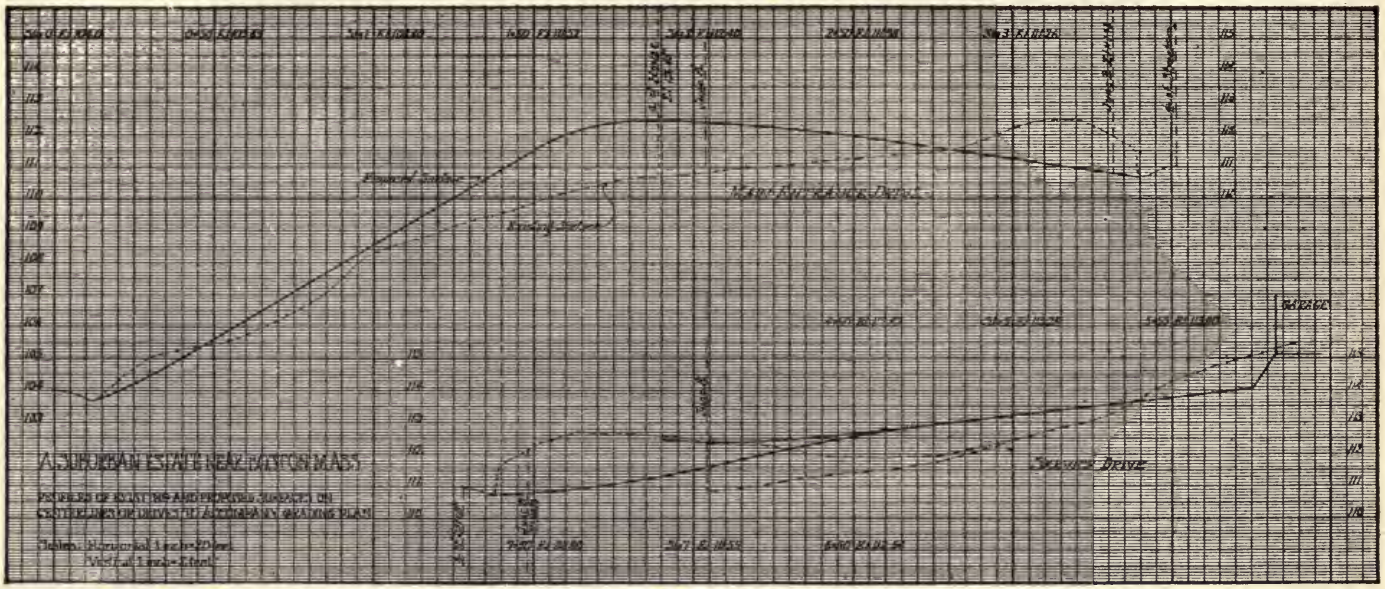
DRAWING XXXVI



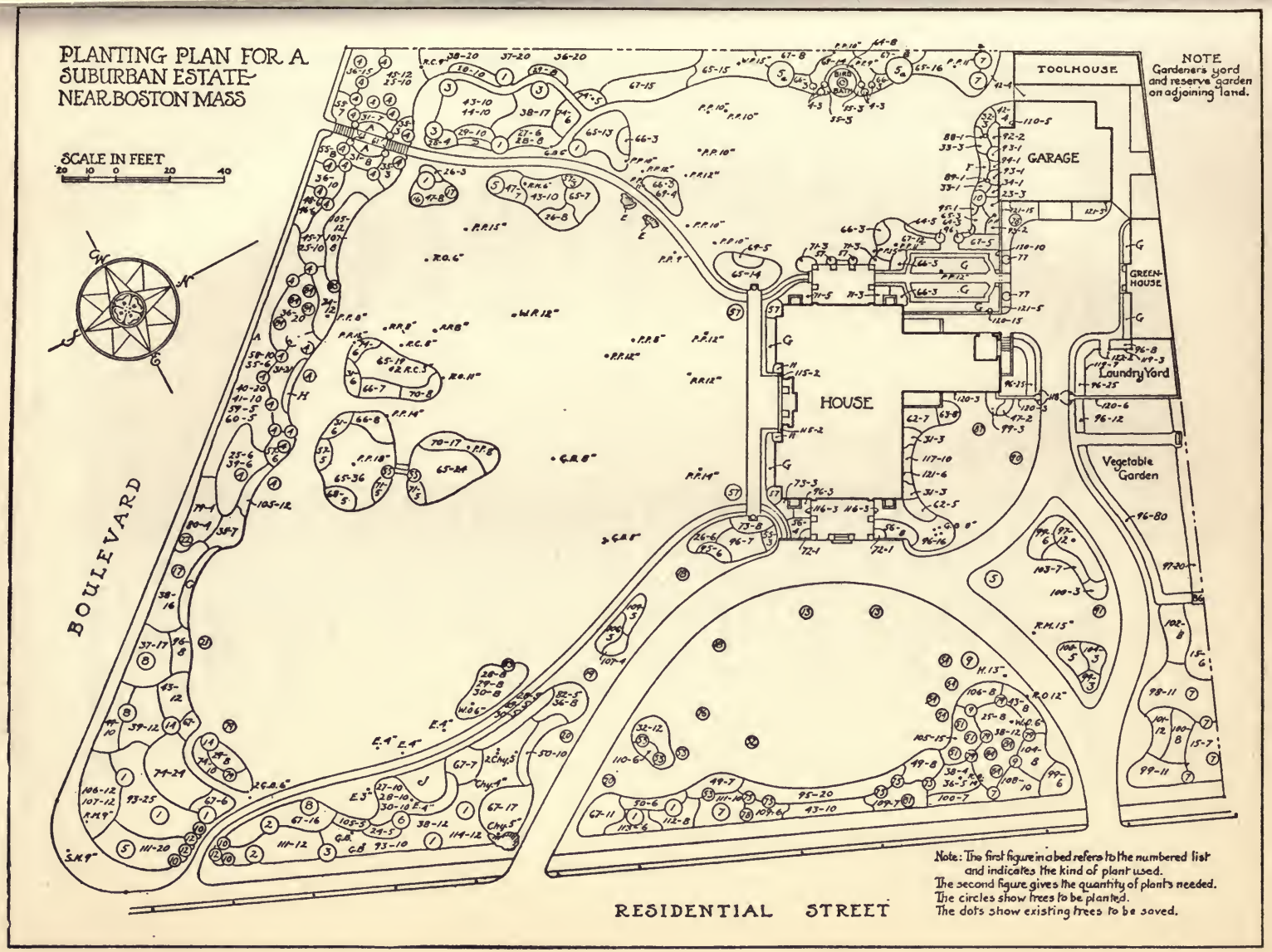
DRAWING XXXVII



DRAWING XXXVIII



DRAWING XXXIX


PLANTING PLAN FOR A SUBURBAN ESTATE NEAR BOSTON MASS
SCALE IN FEET
20 10 0 20 40
NOTE
Gardeners yard and reserve garden on adjoining land.
TOOLHOUSE
GARAGE
GREEN-HOUSE
Laundry Yard
HOUSE
Vegetable Garden
BOULEVARD
RESIDENTIAL STREET
Note: The first figure in a bed refers to the numbered list and indicates the kind of plant used.
The second figure gives the quantity of plants needed.
The circles show trees to be planted.
The dots show existing trees to be saved.

DRAWING XL

LIST OF PLANTS *

To Accompany Planting Plan for a Suburban Estate near Boston, Mass.

1 Tsuga canadensis
Common Hemlock
2 Pinus Strobus
White Pine
3 Pinus resinosa
Red Pine
4 Juniperus virginiana
Red Cedar
5 Abies concolor
White Fir
5*a* Abies concolor
White Fir (larger trees)
6 Pinus nigra austriaca
Austrian Pine
7 Picea canadensis
White Spruce
8 Pseudotsuga Douglasii
Douglas Spruce
9 Abies Nordmanniana
Nordmann's Fir
10 Retinispora plumosa
Plumed Japanese Cypress
11 Retinispora plumosa aurea
Golden Plumed Japanese Cypress
12 Retinispora squarrosa
Veitch's Japanese Cypress
13 Thuya occidentalis
Arbor Vitæ
14 Picea Engelmannii
Engelmann's Spruce
15 Salix vitellina aurea
Golden-barked Willow
16 Salix pentandra
Laurel-leaved Willow
17 Betula papyrifera
Canoe Birch
18 Ulmus americana
American Elm
19 Platanus orientalis
Oriental Plane
20 Quercus rubra
Red Oak
21 Ulmus campestris
English Elm
22 Betula lutea
Yellow Birch
23 Eleagnus argentea
Silver Thorn
24 Calycanthus floridus
Carolina Allspice
25 Cornus mas
Cornelian Cherry
26 Berberis Thunbergii
Japanese Barberry
27 Azalea gandavensis sanguinea
Ghent Azalea, Red
28 Azalea nudiflora
Pinxter Flower
29 Azalea lutea
Flame Azalea
30 Azalea viscosa
Swamp Pink
31 Azalea amœna
Chinese Azalea
32 Stephanandra flexuosa
Stephanandra
33 Weigela Kosteriana variegata
Variegated Weigela
34 Berberis vulgaris purpurea
Purple Barberry

* These plant names follow the *1917 Official Code of Standardized Plant Names* dopted by the American Joint Committee on Horticultural Nomenclature. Cf. full ublication as *Standardized Plant Names*, 1923.

35 Berberis vulgaris
Common Barberry
36 Viburnum acerifolium
Maple-leaved Viburnum
37 Cornus Amomum
Silky Cornel
38 Viburnum dentatum
Arrow Wood
39 Hamamelis virginiana
Witch Hazel
40 Comptonia asplenifolia
Sweet Fern
41 Myrica carolinensis
Bayberry
42 Hibiscus syriacus
Rose of Sharon
43 Weigela rosea
Pink Weigela
44 Cornus paniculata
Gray Dogwood
45 Aronia arbutifolia
Red Chokeberry
46 Rosa carolina
Swamp Rose
47 Rosa rugosa
Ramanas Rose
48 Rosa lucida
Dwarf Wild Rose
49 Viburnum tomentosum plicatum
Japan Snowball
50 Acanthopanax pentaphyllum
Five-leaved Aralia
51 Magnolia Soulangeana
Soulange's Magnolia
52 Magnolia stellata
Hall's Magnolia
53 Ptelea trifoliata aurea
Golden Hop Tree
54 Acer palmatum atropurpureum dissectum
Red Cut-leaved Japanese Maple
55 Taxus cuspidata
Japanese Yew
56 Pinus montana Mughus
Dwarf Mountain Pine
57 Juniperus communis prostrata
Common Prostrate Juniper
58 Juniperus communis aurea
Golden Juniper
59 Juniperus Sabina tamariscifolia
Savin Juniper
60 Thuja occidentalis globosa
Globe Arbor Vitæ
61 Ilex crenata
Japanese Holly
62 Ilex verticillata
Winterberry
63 Pieris floribunda
Andromeda
64 Rhododendron catawbiense
Southern Rhododendron
65 Rhododendron catawbiense album
Rhododendron (White flowered)
66 Rhododendron maximum
Great Laurel
67 Rhododendron hybridum, everestianum
Rhododendron (Lilac flowered)
68 Rhododendron hybridum, Charles Dickens
Rhododendron (Crimson flowered)
69 Rhododendron hybridum, Caractacus
Rhododendron (Purple flowered)
70 Rhododendron hybridum, President Lincoln
Rhododendron (Rose flowered)
71 Retinispora obtusa nana
Dwarf Japanese Cypress
72 Buxus sempervirens
Dwarf Box
73 Kalmia latifolia
Mountain Laurel
74 Cercis canadensis
Judas Tree
75 Cercidiphyllum japonicum
Japanese Judas Tree

76 Cratægus Oxyacantha Pauli
Double Scarlet Thorn
77 Cratægus coccinea
American White Thorn
78 Cratægus Crus-galli
Cockspur Thorn
79 Cratægus cordata
Washington Thorn
80 Cratægus Oxyacantha
Common Hawthorn
81 Amelanchier canadensis
Shad Bush
82 Halesia tetraptera
Silver Bell
83 Cornus florida
Flowering Dogwood
84 Cornus florida rubra
Red Flowering Dogwood
85 Syringa persica
Persian Lilac
86 Malus Parkmanii
Parkman's Crab
87 Prunus Amygdalus rosea plena
Double-flowering Almond
88 Amygdalus triloba
Double-flowering Plum
89 Prunus serrulata
Japanese Flowering Cherry
90 Malus floribunda
Flowering Crab
91 Philadelphus coronarius aureus
Golden Mock Orange
92 Ligustrum amurense
Amoor River Privet
93 Deutzia Lemoinei
Lemoine's Deutzia
94 Spiræa Vanhouttei
Van Houtte's Spiræa
95 Ligustrum Ibota
Chinese Privet
96 Syringa vulgaris
Common Lilac
97 Forsythia suspensa
Drooping Golden Bell
98 Lonicera bella albida
White Bush Honeysuckle
99 Rhodotypus kerrioides
White Kerria
100 Kerria japonica
Kerria
101 Syringa Marie Legraye
Hybrid Lilac (white)
102 Symphoricarpus racemosus
Snowberry
103 Forsythia suspensa Fortunei
Fortune's Golden Bell
104 Hypericum aureum
Golden St. John's Wort
105 Weigela rosea alba
White Weigela
106 Weigela hybrida, Eva Rathke
Red Weigela
107 Symphoricarpus vulgaris
Indian Currant
108 Lonicera tatarica
Bush Honeysuckle
109 Spiræa Thunbergii
Thunberg's Spiræa
110 Viburnum Opulus sterile
Common Snowball
111 Philadelphus coronarius
Mock Orange
112 Deutzia crenata
Single Pink Deutzia
113 Viburnum cassinoides
Withe Rod
114 Rosa hybrida, Dorothy Perkins
Double Pink Climbing Rose
115 Wisteria sinensis alba
White Chinese Wisteria
116 Euonymus radicans latifolius
Evergreen Creeper
117 Clematis paniculata
Panicled Clematis
118 Lonicera japonica Halleana
Hall's Japanese Honeysuckle
119 Ampelopsis tricuspidata Veitchii
Boston Ivy
120 Hedera Helix
English Ivy
121 Rosa hybrida, Hiawatha
Single Red Climbing Rose

HERBACEOUS GROUP A

(To be planted in spaces as marked on each side of steps, and in ramps and risers of stone flag steps and among rocks on bank along the boulevard, as directed on the ground.)

Phlox subulata
Phlox subulata alba
Vinca minor
Vinca minor alba
Euonymus radicans latifolius
Alyssum saxatile
Arabis albida
Dianthus plumarius
Iberis sempervirens
Cerastium tomentosum
Heuchera sanguinea
Houstonia cærulea

HERBACEOUS GROUP B

Aster alpinus
Aster alpinus albus
Aster novi-belgii
Aster ptarmicoides
Campanula pyramidalis
Lupinus polyphyllus

HERBACEOUS GROUP C

Iris hybrida alpina, white
Iris hybrida alpina, blue
Iris lævigata, Purple Emperor
Iris pumila, white
Iris pumila, blue

HERBACEOUS GROUP D

Daphne Cneorum
Pachysandra terminalis
Euonymus radicans latifolius

HERBACEOUS GROUP E

Daphne Cneorum
Euonymus radicans microphyllus

HERBACEOUS GROUP F

(To be planted in space as marked and on edge of shrub beds near by, as determined on the ground.)

Pæonia hybrida
La Tulipe (pink)
Grover Cleveland (crimson)
Festiva maxima (white)

HERBACEOUS GROUP G

Garden annuals and perennials
Planting shown on detailed plans at larger scale

HERBACEOUS GROUP H

Funkia lancifolia
Funkia subcordata
Convallaria majalis
Polygonatum biflorum
Smilacina racemosa
Ceratostigma plumbaginoides
Erythronium americanum
Viola cucullata
Lilium canadense
Lilium superbum

SELECTED LIST OF REFERENCES ON LANDSCAPE ARCHITECTURE

Bibliography — Periodicals — General — History and historic styles — Theory of landscape design and appreciation — Landscape composition — Natural forms of ground, rock, and water — Vegetation: Planting design — Structures in relation to landscape — Types of landscape designs — Professional practice — Construction and maintenance.

On some parts of the field of landscape architecture there is a wealth of published material from which to choose, but on others — especially on the theory of landscape design and on landscape construction — there is a striking dearth of literature of real value. This condition is reflected more or less by the scale of the subdivisions of this present list. The references selected, however, present a reasonably comprehensive view of the subject of landscape architecture, — the more so, in bringing forward single articles and chapters which have not previously appeared in bibliographies, but which are well worth the attention of students.

Practically all the more important works on landscape architecture, and many of the minor ones, have been examined in libraries here and abroad; and use has been especially made of the comprehensive card bibliography of landscape architecture which is maintained by the Library of the Harvard School of Landscape Architecture, based on the Harvard University and Codman collections, and enlarged from all available sources. In selecting titles for inclusion in the present list, due consideration has been given to books of historical significance; but, since previous lists — as noted in the section BIBLIOGRAPHY — have particularly emphasized the historical aspect of the literature of our field, this list endeavors rather to bring out predominantly titles of practical or inspirational value.

In the references in the geographical subdivisions, under ESTATES AND GARDENS, only modern works or editions have been included because of their greater accessibility; but the value of the older and often contemporary books of plates such as Falda, Perelle, Percier and Fontaine, or the *Nouveau Théâtre de la Grande Bretagne*, should not be overlooked, and for the titles of these the reader is referred to the catalogue of the Codman Collection mentioned below.

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PERIODICALS

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GENERAL

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Parsons, Samuel.
The Art of Landscape Architecture, 1915.
Water. — Islands. Ch. VIII and IX, p. 145–169. illus. Also note plates from Pückler-Muskau, opp. p. 202 and 204.
Grading and Shaping Grounds. Ch. XI, p. 184–199.

Shaler, Nathaniel Southgate.
Outlines of the Earth's History; a popular study in physiography. New York, D. Appleton and Co., 1898. 417 pages. illus.
The origins of land and water forms.

———— ————.
Sea and Land. New York, C. Scribner's Sons, 1894. 252 pages. illus.
Sea and land. p. 1–37.
Sea-beaches. p. 38–74.

VEGETATION. PLANTING DESIGN

See Chapter IX of this book.

American Joint Committee on Horticultural Nomenclature.
Standardized Plant Names, a catalogue of approved scientific and common names of plants in American commerce, prepared by Frederick Law Olmsted, Frederick V. Coville, and Harlan P. Kelsey, sub-committee. Salem, The Committee, 1923. 546 pages. (Now published at New York by A. T. De La Mare Co.)

ARCHITECTURE AND VINES. In *Garden and Forest*, June 20, 1894, v. 7, p. 241–242.

THE ARTISTIC ASPECT OF TREES. In *Garden and Forest*, a series of seven articles, beginning July 4, 1888, in v. 1, and ending May 8, 1889, in v. 2.

Form, texture, and color are considered each in an article.

BAILEY, LIBERTY HYDE.

The Standard Cyclopedia of Horticulture. New York, The Macmillan Co., 1914–1917. 6 v. illus. plans. (A new 3-volume edition containing same matter was published in 1925, reprinted 1927.)

Note the articles under the heading Planting, which deal with various aspects of planting design, and also other special articles by well-known landscape architects on topics in the field of landscape design.

———— ————.

Manual of Cultivated Plants; a flora for the identification of the most common or significant species of plants grown in the continental United States and Canada for food, ornament, utility, and general interest, both in the open and under glass. New York, The Macmillan Co., 1924. 851 pages. illus.

———— ————, *editor.*

Cultivated Evergreens; a handbook of the coniferous and most important broad-leaved evergreens planted for ornament in the United States and Canada. New York, The Macmillan Co., 1925. 434 pages. illus. (Substantially the same as 1923 edition.)

CAPARN, HAROLD A.

Carpet Bedding. In *Garden and Forest*, Sept. 26, 1894, v. 7, p. 382–383.

CURTIS, CHARLES H., AND W. GIBSON.

The Book of Topiary. London, J. Lane, 1904. 80 pages. illus.

Both historical and practical.

DOWNING, ANDREW JACKSON.

Wood and Plantations. In his *Treatise on the Theory and Practice of Landscape Gardening*, Section III.

Note the discussion under the topic: Classification of Trees as to Expression.

ELIOT, CHARLES.

Anglomania in Park Making. In *Charles Eliot, Landscape Architect*, p. 215–218.

Planting in relation to landscape character.

FERNOW, BERNHARD E.

The Care of Trees in Lawn, Street and Park, with a list of trees and shrubs for decorative use. New York, H. Holt & Co., 1910. 392 pages. illus. (Also later reprints.)

Note especially Ch. VIII, Esthetic Forestry.

GILPIN, REV. WILLIAM.

Remarks on Forest Scenery, and other woodland views (relative chiefly to picturesque beauty) illustrated by the scenes of New-Forest in Hampshire. . . . London, Printed for R. Blamire, 1791. 2 v. illus.

On the characteristics of trees and their composition in groups and woodlands.

HAMBLIN, STEPHEN F.

List of Plant Types for Landscape Planting. Cambridge, Harvard University Press, 1923. 163 pages.

JEKYLL, GERTRUDE.

Colour in the Flower Garden. London, "Country Life," 1908. 148 pages. illus. plans. (The "Country Life" Library.) Also later reprints, of which that of 1914 is called: *Colour Schemes for the Flower Garden.*

Excellent on the informal grouping of plants.

——— ———.

Wall and Water Gardens. London, G. Newnes; New York, C. Scribner's Sons, 1901. 177 pages. illus. (The "Country Life" Library.) Also later reprints.

KENNION, EDWARD.

An Essay on Trees in Landscape; or an attempt to shew the propriety and importance of characteristic expression in this branch of art, and the means of producing it: with examples. London, Printed by T. Bensley, for C. J. Kennion, 1815. 48 pages, and plates.

Of value for its discussion of the natural character of trees as expressed in their method of growth as well as for the drawing of trees.

LOUDON, JOHN CLAUDIUS.

Observations on the Formation and Management of Useful and Ornamental Plantations; on the Theory and Practice of Landscape Gardening. . . . Edinburgh, A. Constable & Co., 1804. 342 pages. illus.

Note especially:—
Section II. Of the Characteristic Distinction and Particular Properties of Trees and Shrubs.
Section III. On the Arrangement of Trees and Shrubs. (Especially remarks on color.)
Section IV. Of the Disposition of Wood, with respect to the surface of the grounds about a place, and the general surface of the country.

MATTHEWS, W. H.

Mazes and Labyrinths, a general account of their history and developments. London, Longmans, Green and Co., 1922. 254 pages. illus.

Note especially the chapters on turf and topiary labyrinths.

OLMSTED, JOHN CHARLES.

Hints about Lawns. In *Garden and Forest*, Jan. 23, 1889, v. 2, p. 38.

Lawns considered as design units.

PARSONS, SAMUEL.
Plantations. In his *Art of Landscape Architecture*, Ch. XII, p. 200–225. illus.
Contains several quotations from sources referred to in this section of the bibliography.

ROBINSON, WILLIAM.
The English Flower Garden. . . . London, J. Murray, originally published 1883. Many subsequent editions, revised and enlarged, with varying titles. illus.
Design and arrangement, with descriptions of trees, shrubs, and herbaceous plants. The source of inspiration of much of the modern appreciation of naturalistic garden planting in England and this country.

SALISCH, HEINRICH VON.
Forstästhetik. Dritte, vermehrte Auflage. Berlin, J. Springer, 1911. 434 pages. illus.

SARGENT, CHARLES SPRAGUE.
Manual of the Trees of North America (exclusive of Mexico) with seven hundred and eighty-three illustrations from drawings by Charles Edward Faxon and Mary W. Gill. Boston, Houghton Mifflin Co. (second edition), 1922. 910 pages. (Thoroughly revised and enlarged from the original edition of 1905.)

SEDGWICK, MRS. MABEL CABOT, ASSISTED BY ROBERT CAMERON.
The Garden Month by Month; describing the appearance, color, dates of bloom and cultivation of all desirable, hardy plants for the formal or wild garden, with additional lists of aquatics, vines, etc. . . . New York, F. A. Stokes Co. [1907] 516 pages. illus. (Also later reprints.)

TAYLOR, A. D.
The Complete Garden. Garden City, N. Y., Doubleday Page & Co., 1921. 440 pages. illus.

WEATHERS, JOHN.
My Garden Book; prepared for the daily use of all who own a garden, big or little. London, Longmans, Green and Co., 1924. 774 pages. illus. colored plates.

WHATELY, THOMAS.
Of Wood. In his *Observations on Modern Gardening*, Sections XII–XXV.

STRUCTURES IN RELATION TO LANDSCAPE

See Chapter X of this book.

AMERICAN COUNTRY HOUSES OF TODAY, 1927.
Also earlier volumes of series, 1912, 1913, 1915, 1917, all published in New York by the Architectural Book Publishing Company.

ARCHITECTURAL RECORD.
For October, 1919, with many illustrations and plans. Edited with a treatise on the American Country House, by Fiske Kimball.
I Practical conditions: natural, economic, social.
II Artistic conditions: traditions and tendencies of style.
III The solutions: disposition and treatment of house and surroundings.

CAPARN, HAROLD A.
The Aesthetic Value of Roads and Walks. In *Garden and Forest*, July 11, 1894, v. 7, p. 272–273.

——— ———.
Statuary in Informal Settings. In *Landscape Architecture*, Oct. 1910, v. 1, p. 22–30. illus.

DRIVES AND WALKS. In *Garden and Forest*, 1889, v. 2, a series of four articles beginning Sept. 11 and ending Oct. 2.
Esthetic design.

ELIOT, CHARLES W., 2ND.
The Influence of the Automobile on the Design of Park Roads. In *Landscape Architecture*, Oct. 1922, v. 13, p. 27–37.

EMERSON, WILLIAM, AND GEORGES GROMORT.
Old Bridges of France. With 24 reproductions in color from the watercolors by Pierre Vignal. New York, Press of the American Institute of Architects, 1925. 124 pages + plates.

FENCES. In *Garden and Forest*, 1893, v. 6, a series of three articles beginning Nov. 22 and ending Dec. 13.
"Fences" is used in the sense of structural boundaries, including walls.

HAMERTON, PHILIP GILBERT.
Architecture in Landscape. In his *Landscape*, Ch. XXXVII.
Buildings in their large relations to their landscape settings.

HOPKINS, ALFRED.
Modern Farm Buildings; being suggestions for the most approved ways of designing . . . buildings of the farm group, on practical, sanitary and artistic lines. New York, Robert M. McBride & Co., 1920. 237 pages. illus. plans. (Earlier edition, 1913.)

JEKYLL, GERTRUDE, AND CHRISTOPHER HUSSEY.
Garden Ornament. London, Country Life; New York, C. Scribner's Sons, 1927. 438 pages. illus. plates. folio. (An earlier edition by Miss Jekyll appeared in 1918.)

LAWSON, THOMAS H.
The Art and Craft of Garden Making. (See under ESTATES AND GARDENS.)
Contains many interesting illustrations of structures used in landscape design.

Olmsted, Frederick Law, Jr.
Notes on Laying Out Roads for Pleasure Travel in Scenic Areas. In *City Planning*, Oct. 1928, v. 4, p. 278–283.

Sitwell, Sir George.
An Essay on the Making of Gardens, 1909. *Passim*, but especially p. 80–86.
Interesting observations on the architectural use of water, as exemplified in the gardens of Italy.

Tyrrell, Henry Grattan.
Artistic Bridge Design. A systematic treatise on the design of modern bridges according to aesthetic principles. With an introduction by Thomas Hastings. Chicago, The Myron C. Clark Publishing Co. [1912] 294 pages. illus.

Underwood, Loring.
The Garden and its Accessories. Boston, Little, Brown & Co., 1907. 215 pages. illus. (Also later edition.)
On garden structures and garden furniture.

Van Rensselaer, M. G. (Mrs. Schuyler).
Color in Rural Buildings. In *Garden and Forest*, Mar. 30, 1892, v. 5, p. 146–147.

Waugh, Frank A.
Outdoor Theatres: the design, construction and use of open-air auditoriums. Boston, R. G. Badger, 1917. 151 pages. illus. plans.

TYPES OF LANDSCAPE DESIGNS

See Chapter XI of this book.

André, Édouard.
L'Art des Jardins. 1879.
Division et Classification des Jardins. Ch. VII, p. 184–200.
Exemples et Descriptions de Parcs et de Jardins classés suivant leur destinations. Ch. XI, p. 752–835.

Child, Stephen.
Landscape Architecture: a series of letters. Stanford University, California, Stanford University Press, 1927. 279 pages. illus. plans.
Each letter deals with a typical problem.

Migge, Leberecht.
Groszstadt und Garten. — *A*. Private Gärten. — *B*. Öffentliche Gärten. — *C*. Gartenähnliche Bildungen. In his *Die Gartenkultur des 20. Jahrhunderts*, 1913, p. 6–57. illus. plans.
A brief discussion of a large number of the types of landscape designs according to use.

Parsons, Samuel.
Landscape Gardening Studies. New York, J. Lane Co., 1910. 107 pages. illus. plans.
Typical examples of problems in landscape design and their solutions.

VACHEROT, J.
Parcs et Jardins, album d'études précédes de la 2e édition de Les Parcs et Jardins au commencement de XXe siècle. Paris, O. Doin, 1925. 139 pages + 126 plates. illus. plans.

WAUGH, FRANK A.
Textbook of Landscape Gardening, designed especially for the use of non-professional students. New York, John Wiley & Sons, 1922. 344 pages. illus. plans.
Briefly stated domestic and civic problems.

ESTATES AND GARDENS

BLOMFIELD, REGINALD, AND F. INIGO THOMAS.
The Formal Garden in England. London, Macmillan & Co., 1892. 249 pages. illus. (Also later editions.)
The second edition, also 1892, contains a preface on behalf of architectural garden design in controversy with the naturalistic point of view as set forth by William Robinson.

BOTTOMLEY, M. E.
The Design of Small Properties: a book for the home owner in city and country. New York, The Macmillan Co., 1926. 233 pages. illus. plans. tables.

DURYEA, MINGA POPE.
Gardens In and About Town, with a foreword by Richardson Wright. New York, E. P. Dutton Co., 1923. 183 pages. illus. plates. plans.
Features backyard and roof gardens.

GODFREY, WALTER H.
Gardens in the Making, with illustrative designs by the author and Edmund L. Wratten. [London] B. T. Batsford. [1914] 207 pages. illus. plans.
On garden design. The pictures are pen and ink sketches.

HOLME, C. GEOFFREY, AND SHIRLEY B. WAINWRIGHT, *editors*.
Modern Gardens, British and Foreign. Text by Percy S. Cane. London, Special winter number of *The Studio*, 1926–27. 166 pages. illus. plates. (From Albert & Charles Boni, New York.)

JEKYLL, GERTRUDE, AND LAWRENCE WEAVER.
Gardens for Small Country Houses. London, "Country Life"; New York, C. Scribner's Sons, 1913. 260 pages. illus. plans. (Also later reprints.)
A valuable reference book of English examples of garden design arranged by topic, and copiously illustrated. See also "Garden Ornament" by Jekyll and Hussey, *ante*.

KELLAWAY, HERBERT J.
How to lay out Suburban Home Grounds. Second edition, enlarged. New York, J. Wiley & Sons, 1915. 134 pages. illus. plans.
A sensible book to put into the hands of persons interested in the improvement of their home grounds.

KEMP, EDWARD.

How to lay out a Garden: intended as a general guide in choosing, forming, or improving an estate, (from a quarter of an acre to a hundred acres in extent) with reference to both design and execution . . . from the 2d London ed., greatly enlarged. New York, Wiley & Halsted, 1858. 403 pages. illus. plans.

First edition appeared 1850, and there are several later editions with varying titles, including a 4th in 1911, "adapted to North America" by F. A. Waugh.

MAWSON, THOMAS H., ASSISTED BY E. PRENTICE MAWSON.

The Art & Craft of Garden Making. 5th edition. London, B. T. Batsford; New York, C. Scribner's Sons, 1926. 440 pages. illus. plans. folio. (Each edition from the first, 1900, enlarged, with additional illustrations.)

Primarily a picture book, of great value for reference in designing.

MUTHESIUS, HERMANN.

Landhaus und Garten. Beispiele neuzeitliche Landhäuser nebst Grundrissen, Innenräumen und Gärten. München, F. Bruckmann A.–G., 1907. 240 pages. illus. plans.

REHMANN, ELSA.

The Small Place; its landscape architecture. New York, G. P. Putnam's Sons, 1918. 164 pages. illus. plans. plates.

A group of designs by landscape architects, analyzed and illustrated. Supplemented by the author's later book *Garden-Making*, Boston, Houghton, Mifflin Co., 1926.

ROBINSON, WILLIAM.

Garden Design and Architects' Gardens. Two reviews [of Sedding, and Blomfield and Thomas]. London, J. Murray, 1892. 73 pages. illus.

See notes under the books referred to.

SCHULTZE-NAUMBURG, PAUL.

Kulturarbeiten; herausgegeben vom *Kunstwart*. München, G. D. W. Callwey, 1902–1907. 5 v. illus. (The volumes have been reprinted at various times.)

Note especially: Bd. 2. Gärten, und Ergänzende Bilder zu Bd. 2.

SEDDING, JOHN D.

Garden-craft Old and New, by the late John D. Sedding, with a memorial notice by the Rev. E. F. Russell. London, Kegan Paul, etc., 1891. 215 pages. illus. (Also several later editions.)

This book groups itself with Blomfield and Thomas in justifying the architectural garden.

SOLLY, V. N.

Gardens for Town and Suburb. London; New York, The Encyclopædia Britannica, 1926. 112 pages + 39 plates. illus. plans.

Especially English backyard town gardens.

Steele, Fletcher.
Design in the Little Garden. Boston, The Atlantic Monthly Press, 1924. 124 pages. illus. plans. (The Little Garden series.)
A good example of a useful book written for the amateur from the viewpoint of the landscape architect.

In addition to the picture books given below portraying gardens of special countries, *see under* HISTORY AND HISTORIC STYLES.

United States

Elwood, Philip H., Jr., *editor*.
American Landscape Architecture. New York, Architectural Book Publishing Co., 1924. 20 pages text + 194 plates.

Lowell, Guy, *editor*.
American Gardens. Boston, Bates & Guild, 1902. 112 plates.
A collection of photographs and thumbnail plans of formal gardens, many of them well known.

Shelton, Louise.
Beautiful Gardens in America. New York, C. Scribner's Sons, 1924. 560 pages. illus. (An enlarged edition of her book first published in 1915, with nearly 200 new illus.)

Great Britain

Gardens Old and New. London, "Country Life"; New York, C. Scribner's Sons, 1902–1907. 3 v. illus. folio. ("Country Life" Library.)
Photographs and descriptions. Out of print. Somewhat superseded by Tipping. (See below.)

Holme, Charles, *editor*.
[International Studio series of English gardens.] London, "The Studio," 1907–1911, each volume containing 136 plates.
The Gardens of England in the Southern and Western Counties. The Gardens of England in the Midland and Eastern Counties. The Gardens of England in the Northern Counties.

Jekyll, Gertrude, and George S. Elgood.
Some English Gardens. After drawings by George S. Elgood, with notes by Gertrude Jekyll. London, Longmans, Green & Co., 1904. 131 pages. colored plates. folio.

Macartney, Mervyn.
English Houses and Gardens in the 17th and 18th centuries; a series of bird's-eye views reproduced from contemporary engravings by Kip, Badeslade, Harris and others, with descriptive notes. London, B. T. Batsford; New York, C. Scribner's Sons, 1908. 38 pages and 61 plates.

THE MODERN ENGLISH GARDEN.
Introduction by E. H. M. Cox. London, "Country Life"; New York, C. Scribner's Sons, 1927. 24 pages + 192 plates.

TIPPING, H. AVRAY.
English Gardens. London, "Country Life"; New York, C. Scribner's Sons, 1925. 375 pages. illus. plates. plans. folio.

TRIGGS, H. INIGO.
Formal Gardens in England and Scotland, their planning and arrangement, architectural and ornamental features. Illustrated by drawings by the author and photographs by Charles Latham. London, B. T. Batsford, 1902. 122 plates, including plans. folio.

France

DU CERCEAU, JACQUES ANDROUET.
French Chateaux and Gardens in the XVIth century. A series of reproductions of contemporary drawings hitherto unpublished. By Jacques Androvet Du Cerceau. Selected and described with an account of the artist and his works by W. H. Ward. London, B. T. Batsford, 1909. 36 pages, illus., and xxvii plates. folio.

FORESTIER, J. C. N.
Gardens. A note-book of plans and sketches. Translated from the French by Helen Morgenthau Fox. New York, C. Scribner's Sons, 1924. 237 pages. illus. (The original French edition, *Jardins*, appeared in 1920, Paris, Émile-Paul.)

FRENCH, LEIGH, JR., AND HAROLD DONALDSON EBERLEIN.
The Smaller Houses and Gardens of Versailles from 1680 to 1815. New York, The Pencil Points Press, Inc., 1926. 201 pages. illus. plans.

PÉAN, P.
Jardins de France: 132 planches, donnant de nombreux aspects de notre pays, accompagnées de plans et de notices explicatives. Paris, A. Vincent, 1925. 2 v. folio.

ROUX-SPITZ, M.
Bâtiments et Jardins: Exposition des Arts Décoratifs, Paris, 1925. Cent planches en heliogravure avec une introduction et des notices. Paris, Albert Lévy. 55 pages + 100 plates.

Germany

LANGE, WILLY D.
Gartenbilder. Leipzig, J. J. Weber, 1922. 366 pages. illus. plates. (Webers Illustrierte Gartenbibliothek. Bd. 6.)

WIEPKING-JÜRGENSMANN, HEINRICH FR.
Garten und Haus. I. Das Haus in der Landschaft. Berlin, Verlag der Gartenschönheit, 1927. 139 pages. illus. plans. (Bücher der Gartenschönheit. Bd. 6.)

DIE WOCHE.
Hausgärten. Skizzen und Entwürfe aus dem Wettbewerb der *Woche*. Berlin, A. Scherl, 1908. 119 pages. illus. plans.
Characteristic designs for modern German small estates as developed before the war.

See further GARTENKUNST *and* GARTENSCHÖNHEIT (*under* PERIODICALS), MIGGE, *and* MUTHESIUS *above*.

Italy

DAMI, LUIGI.
The Italian Garden. Translated by L. Scopoli. New York, Brentano's, 1925. illus. 351 full-page plates, with text. folio.

EBERLEIN, HAROLD DONALDSON.
Villas of Florence and Tuscany . . . with a frontispiece in colour and 299 illustrations mostly from photographs by the author. Philadelphia & London, J. B. Lippincott Co.; New York, The Architectural Record Co., 1922. 411 pages.

ELGOOD, GEORGE S.
Italian Gardens, after drawings by George S. Elgood, with notes by the artist. London, Longmans, Green and Co., 1907. 156 pages. colored plates. folio.

FAURE, GABRIEL.
The Gardens of Rome, translated by Frank Kemp, water-colours by Pierre Vignal. Grenoble, J. Rey, 1924. 100 pages. illus. water-colours.

FORBES, A. HOLLAND.
Architectural Gardens of Italy. A series of photogravure plates from photographs made and selected by A. Holland Forbes. New York, Forbes & Co., 1902. 196 plates, including plans. folio.

GROMORT, GEORGES.
Jardins d'Italie; 148 planches donnant plus de 170 vues des villas de la Campagne romaine, de la Toscane et de la Haute-Italie, accompagnées de 25 plans, d'une préface et d'un texte explicatif. Paris, A. Vincent, 1922. 2 v. folio.

PHILLIPPS, E. MARCH.
The Gardens of Italy, with historical and descriptive notes. Edited by Arthur T. Bolton. London, "Country Life"; New York, C. Scribner's Sons, 1919. 396 pages. illus. plates. folio.
Contains the original set of photographs by Charles Latham and about 150 new ones, together with a series of plans collected from the older sources, with historical and architectural notes. There are new chapters by the editor on the villas of Venetia, the Lake District, and Genoa.

SHEPHERD, J. C., AND G. A. JELLICOE.
Italian Gardens of the Renaissance. London, Ernest Benn, Ltd., 1925. Text with 92 plates. folio.

TRIGGS, H. INIGO.
The Art of Garden Design in Italy, illustrated by photographs and plans and numerous sketches in the text taken from the original surveys and plans especially made by the author and photographs by Mrs. Aubrey Le Blond. London, Longmans, Green and Co., 1906. 134 pages, illus., and 128 plates, including plans. folio.

Spain, Portugal, and Morocco

BYNE, MILDRED STAPLEY, AND ARTHUR BYNE.
Spanish Gardens and Patios. Philadelphia, J. B. Lippincott Co., 1924. 305 pages. illus. plates. plans.

GROMORT, GEORGES.
Jardins d'Espagne: 124 planches donnant plus de 160 vues des jardins anciens et modernes de l'Andalousie et des deux Castilles, accompagnées de 20 plans, d'une préface et d'un texte explicatif. Paris, A. Vincent, 1926. 2 v. folio.

GALLOTTI, JEAN.
Le Jardin et la Maison arabes au Maroc; avec 160 dessins de Albert Laprade et 136 planches en héliogravure d'après les photographies de Lucien Vogel. Paris, Albert Lévy, 1926. 2 v.

BYNE, ARTHUR, AND MILDRED STAPLEY.
Majorcan Houses and Gardens: a Spanish island in the Mediterranean. New York, William Helburn, 1928. 17 pages + 188 plates.

VARIOUS SEMI-PUBLIC TYPES

ARCHITECTURAL FORUM.
For June, 1926, v. 44, no. 6. University Buildings reference number.
This deals with modern requirements for university buildings. For building grouping see articles by Githens in *Brickbuilder*, referred to in note on p. 194.

MANNING, WARREN H.
Landscape Phase of the University of California Plan. In *American Architect and Building News*, July 16, 1898, v. 61, p. 20–22.
The competition for the University of California plan.

THOMAS, GEORGE C., JR.
Golf Architecture in America, its strategy and construction. Los Angeles, Times-Mirror Press, 1927. 342 pages. illus. plans.

Pray, James Sturgis.
Railroad Grounds; a study of their design, planting and relation to community. Reprinted from *Parks and Recreation*, 1921. 21 pages. illus.

Seavey, Frances Copley.
Railroad-Gardening. In Bailey's *Standard Cyclopedia of Horticulture*, v. 5, 1916, p. 2898–2903. illus. plans.
On planning and planting the areas about railroad stations and rights-of-way.

Budden, Lionel B.
The Relation of Exposition Planning to Civic Design. In *Town Planning Review*, Jan. 1916, v. 6, p. 153–162. illus. plans.
Includes a discussion of the principles of design applied to effective grou ing of Exposition buildings.

Edgell, G. H.
The American Architecture of To-day. New York, C. Scribner's Sons, 1928. 401 pages. illus. plans.
Especially the section on Expositions.

Olmsted, Frederick Law, Jr.
Notes on the Antwerp Quay and on the Exhibition of Animals in Zoological Parks. 1902. 7 pages. illus. plans. (Park Improvement Papers, 2d series, No. 2. Printed for the use of the Senate Committee on the District of Columbia.) Included also in later compiled volume.

Weir, L. H., *editor*.
Park Manual. (See under parks.)
Chapter XVII. Zoological parks and aquariums.
Chapter XVIII. Botanical gardens.

Britton, N. L.
Botanical Gardens; portion of address before American Association for the Advancement of Science, 1896. In *Garden and Forest*, Sept. 2 and 9, 1896, v. 9, p. 352–353, 362–363.
Purposes, design, brief history in the United States.

Wilson, Ernest H.
America's Greatest Garden, the Arnold Arboretum. Boston, The Stratford Co., 1925. 123 pages. illus. plates.

Cemeteries

Caparn, Harold A.
Modern Meditations among the Tombs. In *Landscape Architecture*, July 1911, v. 1, p. 172–180. illus. plan.
On the improvement of the "park cemetery" by better design and more planting.

CEMETERY HAND-BOOK, an encyclopedia. Chicago, Published by Park and Cemetery and Landscape Gardening (Allied Arts Publishing Co.), 1921. About 700 pages. illus.

Contains treatise on design and development by Hare & Hare.

OLMSTED, JOHN CHARLES.

The Two Types of Cemeteries. In *Garden and Forest*, May 23, 1888, v. 1, p. 147–148.

Architectural and landscape.

PARKS AND PLAYGROUNDS

ALPHAND, A.

Les Promenades de Paris. Histoire — descriptions des embellissements — dépenses de création et d'entretien des Bois de Boulogne et de Vincennes, Champs-Élysées — parcs — squares — boulevards — places plantées. Étude sur l'art des jardins et arboretum. Paris, J. Rothschild, 1867–1873. 246 pages text with illus., and atlas, including plans. folio.

A monumental work.

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE.

Public Recreation Facilities. Philadelphia, 1910. 266 pages. illus. (Annals, v. XXXV, no. 2.)

On local and national recreation facilities. Of historic interest.

AMERICAN INSTITUTE OF PARK EXECUTIVES (present name taken 1921).

Proceedings, from 1899, and Bulletins, from 1906, to 1917 of American Association of Park Superintendents subsequently published in *Parks and Recreation*. (See under PERIODICALS.)

Cover interesting points in park construction and administration.

AMERICAN PARK AND OUTDOOR ART ASSOCIATION.

[Addresses and Proceedings.] 1897–1904. 7 v.

Contain many interesting papers on public parks and related subjects.

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.

Our National Parks: a conference. Addresses and letters presented at a meeting of the Society, 1916. In *Landscape Architecture*, Apr. 1916, v. 6, p. 101–123.

Brings out the relation between the profession of landscape architecture and our national parks.

BURNAP, GEORGE.

"Passing-through" Parks. In his *Parks, Their Design, Equipment and Use*. Philadelphia, J. B. Lippincott Co., 1916, Ch. IV, p. 78–96. illus.

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INDEX

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Abel, Lothar, quoted, *note*, 29; *ref.*, 368
Abercrombie, Patrick, *ref.*, 388
Access, as affecting location and orientation of house in the estate, 253–57; roads and paths in the estate, 269–72; access to the large landscape park, 308–9
Adams, Thomas, *ref.*, 388
Addison, Joseph, 45
Advertising, in professional practice of landscape architecture, 329–31
Aërial perspective, *see* Atmospheric perspective
Agg, T. R., *note*, 220
Aldobrandini, Villa, 41
Alhambra, 35
Allées (Alleys), in style of Le Nôtre, 43; pleached, 48; forming vistas, 125; type of trees suitable for formal rows, 154; texture of trees in avenue, 157; specimens in rows, 173; allée converging attention on structure, 187; pavilions on axis of, 197; statuary along, 210
Alleys, in land subdivision, 282–83
Alphand, A., *ref.*, 384
Alps, climbing in, sequence of effects of landscape, 84–85
Amenity, an asset in land subdivision, 277
American Academy in Rome, *note*, 333
American Academy of Political and Social Science, *ref.*, 384
American Association of Park Superintendents, *ref.*, 384
American City Planning Institute, *ref.*, 386
American Civic Association, *ref.*, 389
American colonial gardens, New England colonial style, 50–51; *ref.*, 367
American Country Houses of To-day, *ref.*, 374
American Institute of Architects, general professional statement approved by, 331; *ref.*, 369
American Institute of Park Executives, *refs.*, 384, 386
American Joint Committee on Horticultural Nomenclature, *note*, 357; *ref.*, 371
American landscape style, modern, 57–59
American Park and Outdoor Art Association, *ref.*, 384
American Society of Landscape Architects, founded 1899, 325; definition of a landscape architect in good standing, 326; attitude towards professional advertising, 330; general professional statement approved by, 331; *notes*, 325, 333; *refs.*, 363, 384, 392
Amherst, Hon. Alicia, *note*, 49; *ref.*, 365
Amphitheaters, natural, in the large landscape park, 305
Amusement parks, 232; relation to landscape parks, 307–8
Analysis in design, esthetic, 16
André, Édouard, *notes*, 175, 225; *refs.*, 363, 368, 370, 371, 376
Animals, as element in landscape composition, 129; sheep in parks, 301, 315
Announcements, professional, of the landscape architect, 331
Annuals, in flower beds, 178–79
Appreciation, taste and, 22
Appreciation of landscape, 12; quotation from Shaler, 12–13; *refs.*, 368–70
"Appropriation," Repton's phrase, *notes*, 58, 267
Arboretums, *ref.*, 383
Arbors, 51, 54, 246, 262
Archery, provision for, in the large landscape park, 305–6
Architect, comparison with landscape architect, 151, 325–27, 342; coöperation with landscape architect, 193–94, 333–34; in city planning, 334

Architectural design, scale in, 102
Architectural structures, *see* Structures, Architectural
Architectural style, *see* Style, Architectural
" Architectural " styles of landscape design, 34
Architecture, 3, 232; *ref.*, 383
Arnold Arboretum, Boston, *illus.*, plate 15; *ref.*, 383
Art, works of, basis of permanent appeal, 15
Ashbee, C. R., *ref.*, 389
Asphalt, as material of roads and paths, 219, 228
Association, incongruity of, unpleasant, 10; experience, emotion, and, 12–16; in Japanese garden design, 56; unity from, in style, 61; melancholy effect of landscape, due to, 82; as modifying shape composition, 101; illusions of, in composition, 121–22; in plant character, 165–66; plant symbolism, 166–67; congruity of, in shapes in carpet bedding, 182; as giving distinctiveness to garden, 238
Atmosphere, 113–16; haziness giving effect of mystery, 82; as a consideration in landscape composition, 115–16
Atmospheric perspective, 113–16; as a consideration in landscape composition, 115–16; foliage color and, 161
Attention, mode of attraction, basis of distinction between " beautiful " and " picturesque " effects, 77–79; a consideration in landscape composition, 90–91; mode of attraction by hill and mountain forms, 131–32, by tree forms, 154
Automobile traffic, relation to the large landscape park, 310
Autumn foliage, 161–62
Axial arrangement, broken axis, 118, at Isola Bella, 120; of buildings in groups, 194; of minor buildings in scheme, 197; of steps in scheme, 203; paths on axis of design, 227; of house and garden, 260. *See also* Formal gardens

Backgrounds, in composition, 126–28; for grille-work, 209; of statuary, 212–13
Bailey, Liberty Hyde, *refs.*, 372
Balance, of interest, example in pictorial composition, 90; balance in composition, 96–97, symmetrical, 97; occult, 97; intensification of emotion from, 97–98; of shapes in composition, 100; of textures in composition, 104; in color composition, 108, 110; in mountain forms, 133; sought in garden design, 236–37
Baltit, Hunza, *illus.*, plate 36
Balustrades, 48, 199, 200, 201, 202, 216; illusions of material, 117, 119
Bandstands, in the large landscape park, 315
Banks, of streams, 140–42; earth and bowlder, 144; bowlder, 146; earth, design, 148–50; terrace, 198, 199, 200–1; steps in turf banks, 202; banks as part of garden boundary, 235, 240–41
Bark of trees and shrubs, color, 162
Baroque villas in Italy, style of, 39–42
Barren or tundra, a landscape character, 65–66
Bartholomew, Harland, *ref.*, 389
Baseball, provision for, in the large landscape park, 307
Basins, *see* Pools
Bassett, E. M., *note*, 293
Bathing facilities as part of recreation system, 297
Beaches, and sand dunes, 66; as elements in design, 138–40; of brooks and ponds in landscape parks, 303–4; sea, *ref.*, 371
" Beautiful," literary discussions of the term as opposed to " picturesque," 77–78; application in design, 78–79; Price's Essay on the, *ref.*, 369
Beauty, definition, 19–21; and ugliness, 20; and pleasure, 20; no universal standards of, 20–21; in landscape character, 63; an asset in land subdivision, 277–78
Bedding plants, *see* Carpet bedding
Beds, *see* Carpet bedding, Flower beds, Herbaceous beds, Shrub beds
Belgium, replanning, *ref.*, 391
Bibliography of landscape architecture, *refs.*, 361–62
" Big Trees," 66
Bingham, Robert F., *ref.*, 390
Bird-baths, 245
Birds, attraction by berry-bearing trees and shrubs, 162
Blocks in land subdivision, *see* Land subdivision, subtopics: Streets, Lots

Blomfield, Reginald, *refs.*, 368, 377
Boathouses, in the large landscape park, 315
Boating, provision for, in the large landscape park, 305
Boccaccio, 40
Bolton, Arthur T., *ref.*, 381
Bonney, Edmund A., *note*, 220
Border lines, on landscape plans, 350
Borders, herbaceous, 176–77
Bosquets, 42, 43; design, 167; pools in, 216
Boston, Arnold Arboretum, *illus.*, plate 15; Franklin Park, *ref.*, 383, *illus.*, opp. 298, plates 31, 32, 33, 34, 35
Boston Public Library, *ref.*, 361
Botanical gardens, 232; *ref.*, 383
Bottomley, M. E., *ref.*, 377
Boulevards, relation to the large landscape park, 310
Boundaries, *see* Inclosure
Boundary plantations, *see* Inclosing plantations
Bowlders, in streams, 140–41; in naturalistic design, 144–45
Bowling-greens, 48, 266, 305
Bradfield, Devon, *illus.*, opp. 158
Brick, color of buildings in relation to landscape, 195; walls, 206; as material of roads and paths, 219, 229
Bridges, Japanese, 56; planting as enframement of bridge and views from, 187; bridges as elements in landscape design, 216–18; forms and materials, 217–18; for roads crossing at separated grades, 222; over brooks and ponds in landscape parks, 303–4; *refs.*, 375, 376
Bridle paths, materials, 227; in the large landscape park, 311, interrelation with roads and footpaths, 313–14
Brinckmann, A. E., *ref.*, 366
Britton, N. L., *ref.*, 383
Broken stone, as material of roads and paths, 219, 228
Brookline, Mass., "Weld," *illus.*, plate 30
Brooks, symbolic representation in Japanese gardens, 55; as elements in design, 140–42; in large landscape parks, 303–4
Brown, "Capability," *note*, 47; monotony of his designs, 49; his "clumps," Price quotation, *note*, 173–74
"Browsing line," 69
Budden, Lionel B., *ref.*, 383
Building groups, 194; farm, 264
Buildings, planting as enframement, 186; planting as transition from ground to, 187–88; buildings in relation to landscape, 189–96; subordinate to natural character, 189–90; dominating landscape, 190–92; from relations to landscape surroundings, 192–94, texture relations, 194–95, color relations, 195–96; terraces as base for, 198–99; subordination of farm group to landscape surroundings, 264; buildings properly serving park uses, 314–16; in relation to the park landscape, 316; *refs.*, 382, 383
Burnap, George, *ref.*, 384
Burnham, Daniel H., *ref.*, 390
Bushy pasture, a landscape character, 68–69; walls in, 207
Butler, George D., *ref.*, 386
Butler, W. F., quoted, *note*, 64
Byne, Arthur, *refs.*, 382
Byne, Mildred Stapley, *refs.*, 382

Cameron, Robert, *ref.*, 374
Canals, in Moghul gardens, 38; long canal at Versailles, 44
Cane, Percy S., *ref.*, 377
Caparn, Harold A., *notes*, 212, 322; *refs.*, 370, 372, 375, 383, 384
Carpet bedding, as surface decoration, 128; in planting design, 180–82; in garden design, 243; *ref.*, 372
"Cartouches," on landscape plans, 351
Cascades, 37, 41, 214
Castello, Villa, 40
Cement, color of buildings in relation to landscape, 195; as material of roads and paths, 219, 228
Cement concrete, 118, 119; walls, 205–6; roads, 228–29
Cement stucco, *see* Stucco
Cemeteries, 53, 232; *refs.*, 383–84
Central Park, New York, 58; *note*, 308
Chambers, Sir William, *ref.*, 366
Chantilly, 42, 44
Character(s), Landscape, *see* Landscape character(s)
Character, Plant, *see* Plants
Charges, professional, of the landscape architect, 326–28

Child, Stephen, *refs.*, 363, 376
Churches, area reserved for, in land subdivision, 289–90
Circulation, provision of roads and paths in the estate, 269–72; in the large landscape park, 309–14
City planning, influence of style of Le Nôtre, 44–45; types of landscape designs and, 232; choice of type of land development in relation to development of city, 280–82; relation of street system in land subdivision to city plan, 282; relation of outdoor recreation areas to city plan, 297–98; reservation of land for public uses, 318–21; work in, as increasing professional reputation of landscape architect, 329; exhibitions of landscape architects' work, 331; coöperation of landscape architect with other practitioners in, 334; *refs.*, 388–91; landscape architect in, *ref.*, 392
Civic centers, scale relation of buildings, 194; space reserved for, in land subdivision, 290
Classic styles, a category, 33
Classification of landscape architecture, 337
Claude Lorrain, 45, 93
Cleveland, H. W. S., 57, *ref.*, 363
Clients, point of view as stimulus to designer, 15–16; tastes consulted by Japanese designers, 56; desires expressed by landscape designer in terms of effects, 86–87; desires interpreted by designer of estate, 249; desires in relation to choice of site for estate, 273; charges of landscape architect, to, 326–28; relations with landscape architect and contractor, 332–33; desires considered in landscape design, 338–39
Climate, effect on historic styles of landscape design, 29
Climax, in composition, 91–92
Climbing in Alps, sequence of effects of landscape, 84–85
Clouds, as affecting landscape character of prairie, 64; as element in landscape composition, 129
Coasting, provision for, in the large landscape park, 305–6
Codman, Henry Sargent, *ref.*, 361
Codman Collection of books on landscape gardening, *ref.*, 361
Cold frames, 265, 266
College buildings, 194
College grounds, 232; paths in, 226; *refs.*, 382
Collodi (Garzoni), Villa, 41; *illus.*, opp. 40
Colonial gardens, American, *ref.*, 367
Colonial, New England, style of landscape design, 50–51
Color, as modifying shape composition, 101; in composition, 104–11; and light, 105–6; hue, intensity, and value in color composition, 106–7; emotional effect of colors, 107; color harmony, 107–10; in landscape composition, 110–11; illusions of, difficult, 117; differentiation of planes of distance, 127; reflected in water, 137; of rocks, 146; in ground surface, 148; of plant materials, 151, 159–64; of foliage, 159–62; of trees and shrubs in winter, 162; of flowers, 162–64; nomenclature, 163; in inclosing plantations, 168–69; as giving individuality to plants, 172; in tree and shrub groups, 175; arrangement of herbaceous plants in beds, 179; in carpet bedding, 181–82; of turf as background, 182; of buildings in harmony with landscape, 190; of buildings dominating landscape, 191; color harmony of buildings in groups, 194; relations of buildings and landscape surroundings, 195–96, *ref.*, 376; of steps in landscape, 204; of statuary in relation to landscape, 212; of reflections in pools, 216; in materials of roads and paths, 227–30; color of flower as giving distinctiveness to garden, 238; color in representation on landscape plans, 348, 349
Comfort stations, in the large landscape park, 315
"Commercial recreations," relation to the landscape park, 307–8
"Commons," as part of recreation system, 297
Competitions, in professional practice of landscape architecture, 332
Composition, in landscape and in painting, 88–89; order in, objective and subjective, 89–90; forms of order in, 93–97. *See also* Landscape composition
Compositions, pictorial, segregation of, 90; typical kinds, 123–24; example: the vista, 124–25
Compost yards, 265, 266

Concrete, as material of roads and paths, 228–29. *See also* Cement concrete
Conder, Josiah, *ref.*, 366
Conduct, professional, of the landscape architect, 325–26
Construction, use of word, 6; relation to choice of style, 60; of roads, *note*, 220; relation to design of estate, 273–74; superintendence of, 351–53; *refs.*, 392–93
Contractors, relations with landscape architect and client, 332–33; functions in landscape construction, 351–52
Contracts and specifications, 344
Contrast, in landscape effects, 83–84; in composition, 91–92; of foliage color, 160
Coöperation of landscape architect with other practitioners, 333–34; in city planning, 334
Cope, Walter, *ref.*, 368
Corner lots, in land subdivision, 288
Cottage, English, style of landscape design, 49–50
Cottages, German, 52
Country clubs, 232; land set aside for, in subdivision scheme, 290–91
Country hotel grounds, 232
Country houses, *see* Houses
Country parks, *see* Parks, Landscape
Country planning, *refs.*, 388–91
Courtyard gardens, Moorish in Spain, 35
Coville, Frederick V., *ref.*, 371
Cox, E. H. M., *ref.*, 380
Cricket, provision for, in the large landscape park, 307
Crisp, Sir Frank, *ref.*, 366
Criticism, in design, 26–27; self-criticism, 27
Croce, Benedetto, *note*, 19
Croquet lawns, 266
Cross-sections, 345
Crowds, as element in landscape composition, 129
Curbs, road, 228
Curtis, Charles H., *ref.*, 372
Curtis, G. C., *note*, 342
Curves, decorative, use or avoidance for park roads and paths, 313

Daigo, garden of Sambo-in, *illus.*, plate 4
Dami, Luigi, *ref.*, 381
Data, topographic, for landscape design, 339–40
Dawber and Davies, *note*, 50
Day, Frank Miles, *note*, 314
Degrees, professional, in landscape architecture, 325
Delano, Frederick A., *ref.*, 389
Design, use of word, 6; esthetic theory, psychological basis of, 7–16; esthetic analysis in, 16; sincerity in, 17; originality in, 28. *See also* Formal design, Informal design, Landscape design, Naturalistic design, Planting design
Designer, pleasure of artistic creation, 11; breadth of experience, 15–16; imagination and genius, 28; as interpreting the client's desires in design of estate, 249, in design of house, 253
Desolation, an effect sought in Romantic landscape style, 46; frequent effect of barren or tundra, 65; a landscape effect, 81
Detail plans, 345
Distance, in composition, 101–3; and textures in composition, 104; planes of, 115, in composition, 126–28
Ditchfield, P. H., *note*, 50
Dominance, in composition, 91–92
Doolittle, Will O., *ref.*, 363
Downing, Andrew Jackson, *note*, 57; *refs.*, 363, 372
Drainage considerations in land subdivision, 284
Draper, E. S., *ref.*, 392
Drawings, series for a landscape job, 345–46; representation suited to person addressed, 346; typical drawings for a landscape job, 355–56 and *illus.*, following
Drinking fountains, in the large landscape park, 316
Driving, provision for, in the large landscape park, 306
Du Cerceau, Jacques Androuet, *ref.*, 380
Duchêne, A., *ref.*, 366
Dunes, sand, a landscape character, 66
Duryea, Minga Pope, *ref.*, 377
Dutch garden style, influence in England, 49, in Germany, 52; *refs.*, 367

Eberlein, Harold Donaldson, *refs.*, 380, 381
Edgell, G. H., *ref.*, 383
Edgings, texture, 104, 157–58; in planting design, 171; of flower beds, 177; in garden design, 237, 244

Effect(s), Landscape, *see* Landscape effect(s)
Elements in landscape composition: temporary elements, 129; natural forms of ground, rock, and water, 130–50; vegetation, 151–88; structures, 189–230
Elgood, George S., *refs.*, 379, 381
Eliot, Charles, 57; *notes*, 18, 68; *refs.*, 362, 364, 368, 372, 385, 392
Eliot, Charles W., *refs.*, 364, 368, 385
Eliot, Charles W., 2nd, *ref.*, 375
Elizabethan pleasure garden, 49
Elwood, Philip H., Jr., *ref.*, 379
Ely, Richard T., *refs.*, 387, 391
Emerson, William, *ref.*, 375
Emotion, experience, association, and, 12–16; in landscape effect, 22; expressed in Romantic landscape style, 46; and landscape effects, 76–82; intensification from repetition, sequence, and balance, 97–98; suggested by different shapes, 100
Emotional effects, in Romantic landscape style, 46–47, *note*, 77; in Japanese styles, 55–56; of colors, 107; from water in landscape, 137; produced by expression of trees, 166. *See also* Landscape effects
Emphasis, in composition, 91–92
Enframement, pictorial, in landscape composition, 90, 124, 126–28; of plains, 136; of views into inclosing plantations, 168; of structures by planting, 186–87; of steps, 203; of statuary, 212–13. *See also* Inclosure
Engineer, comparison with landscape architect, 325–26, 327; coöperation in city planning, 334; preparing topographic map for landscape architect, 339
Engineering, 3, 232
England, Romantic landscape style in, 45–47; Tudor formal style of landscape design in, 47–49; cottage style of landscape design, 49–50, its influence in America, 50–51; influence of English landscape style in America, 57–58; pastoral landscape, 61, 69–70; gardens, *refs.*, 365, 366, 367, 374, 377, 379–80
Entrance drives, formal, 226; and forecourts, 258; in design of estate, 269–71
Entrance gates, to estates, 209; and forecourts, 258; and lodges, 263–64; to the large landscape park, 308–9
Ermenonville, *note*, 47; *illus.*, plates 2, 3
Espalier trees, 206
Estates, in modern German formal style, 53–54; in modern American landscape style, 58–59; development of landscape character units in, 71; turf in, 183; buildings of, dominating landscape, 191; pavilions in, 197; roads in, crossings, 222; as type of landscape design, 232;
design of the estate, 247–74; as expressing the owner's desires, 247–49; physical elements, 249–72: the house, 250–57; location and orientation of house, 253–57; the house terrace, 257–58; the forecourt, 258–59; the garden as a unit of the estate, 259–61; avoidance of traffic through garden, 259–60; pleasure buildings, 261–62; house service areas, 263; estate service buildings and areas, 263–66; the greenhouse, 264–65; reserve and vegetable gardens, 265–66; tennis courts and areas for other recreations, 266–67; the open lawn, 267–68; tree-shaded areas, 268; natural character units, 268–69; access, 269–72; approach roads, 269–71; paths, 271–72;
design of the whole estate, 272–73; choice of site for, 273–74; apportionment of estate area into units required, 274; typical drawings for development, 355–56 and *illus.*, following; list of plants to accompany planting plan for, 357; *refs.*, 377–82. *See also* Lots in land subdivision
Este, Villa d', 40, 203, 213, 214
Esthetic theory of design, psychological basis, 7–16
Evans, Mary, *ref.*, 362
Evergreens, specimens as building decoration, 188; for winter effect in garden, 260–61
Exhibitions, public, of landscape architecture, 331
Experience, emotion, and association, 12–16
Exposition grounds, 232; *ref.*, 383
Expression, esthetic, 19; style and, 22
Extent, effect of style of Le Nôtre, 42–44; effect of prairie, 64–65; and sublimity, 79; effects of perspective, 102; effect sought in the estate, 267, in the large landscape park, 300–1

Falconieri, Villa, *illus.*, opp. 112
Falke, Jakob, quoted, *note*, 29

Farm buildings, 264; of Hameau at Versailles, 86
Farnese, Villa, 40, 215
Faure, Gabriel, *ref.*, 381
Faxon, Charles Edward, *ref.*, 374
Fences, 51, 128; as elements in landscape design, 204–5; materials and decoration, 207–9; gates in, 209–10; in garden design, 240, 241, 242; as screen of service yard, 263; restrictions concerning, in land subdivision, 293; as park boundary, 318; *ref.*, 375
Ferme ornée, 46
Fernow, Bernhard E., *ref.*, 372
Field force, of landscape architect's office, 335–36
Field houses, in the large landscape park, 315
Fish ponds, 48
Flower beds, 38, 51; texture considerations, 158; edgings, 171; as parts of a garden inclosed, 177–79; arrangement of plants in relation to form of bed and form of plants, 177–78; in relation to time of bloom, 178–79; in relation to color, 179; grouping of plants according to color, 179; carpet bedding, 181; relation of paths to, 227; turf paths among, 230; in garden design, 237, 243–44
Flower gardens, design relation to the vegetable garden, 265; *ref.*, 373. *See also* Flower beds, Gardens
Flower pots, 202
Flowers, in historic styles of landscape design, 35, 36, 48, 50, 51; color, 162–64, practical difficulties of design in, 162–63; circumstances harmonizing flower colors, 163; mass relation in flower color, 163–64; symbolism, 167; along roads, 223; in gardens, 236; color as giving distinctiveness to garden, 238; cultivated flowers in the large landscape park, 305–6
Foliage, effect on texture of tree, 157; color, effect of character of leaves on, 159; range of color, 159; restricted use of other colors than green, 159–60; effects of foliage color, 160; contrast of color in differentiation of units in design, 160; color and aërial perspective, 161; use of "colored foliage," 161; autumn foliage, 161–62; as background for flower colors, 163
Fontainebleau, 44, 192
Football, provision for, in the large landscape park, 307
Footpaths, *see* Paths
Forbes, A. Holland, *ref.*, 381
Ford, George B., *ref.*, 389
Ford, James, *ref.*, 388
Forecourts, in design of the estate, 249; as affecting house location in the estate, 255; relation to house on hillside, 256; design, 258–59; relation to approach road, 270, to service court, 271
Foregrounds, in composition, 126–28; of mountain view, 133
Forestier, J. C. N., *ref.*, 380
Forestry, esthetic, *refs.*, 372, 373, 374
Forests, municipal, 320–21; treatment with regard to landscape character, 72–73
Forests, national, relation to national parks, 322
Forests, state, *refs.*, 384, 385, 386
Form, in differentiation of planes of distance, 127; plant, 153–57; form relations of buildings and landscape surroundings, 192–94, 195; of steps in landscape, 201–4; of statuary in relation to landscape, 212; of bridges, 217–18. *See also* Shape
Formal design, maintenance, 61; composition dependent on symmetrical balance, 97; illusions of shape in, 120; objects in, according to their design value, 128–29; "colored" foliage in, 160; hedges in, 170–71; specimen trees and shrubs in, 173; shrubs in, 176; of building groups, 194; steps in, 201–3; walls and fences in, 204; gates in, 209–10; statuary in, 211; water in, 213–16; tree planting along roads in, 223; roads in, 225–26; paths in, 226–27
Formal gardens, 129, 182, 199, 237; planting of beds in, 178–79; composition, 240–46; in the estate, 259–61. *See also* Formal styles, Gardens
Formal styles, a category, 33–34; of landscape design, examples: Moorish in Spain, 35–36; Moghul in India, 36–39; Italian Renaissance and Baroque, 39–42; Le Nôtre, 42–45; English Tudor, 47–49; New England colonial, 50–51; modern German, 51–54
Formalism, reaction against, in landscape style, 45

Fountain basins, 36, 44, 195
Fountains, in historic styles of landscape design, 36, 40, 41, 43; as objects in composition, 123, 125; texture of material, 195; enframed by steps, 203; free-standing, as elements in landscape design, 215; in pools, 216; in garden design, 244–46
Fountains, Wall, 213–14; in garden design, 241, 246
Fouquier, Marcel, *ref.*, 366
Fox, Helen Morgenthau, *ref.*, 380
France, Le Nôtre's style of landscape design in, 42–45, its influence in England, 49; Romantic landscape style in, 46; estates and gardens, *refs.*, 366, 367, 380
Franklin Park, Boston, *see* Boston
" Free landscape," 68, 75
French, Leigh, Jr., *ref.*, 380
Fruit, of trees and shrubs, in planting design, 162
Fruit trees, in historic styles of landscape design, 36, 51

Gallotti, Jean, *ref.*, 382
Gamberaia, Villa, *note*, 117; *illus.*, opp. 26
Garages, in the estate, 263, 271; restrictions in land subdivision, 292–93
Garden and Forest, *ref.*, 362
Garden Club of America, *ref.*, 362
Garden furniture, 54; *ref.*, 375, 376
Garden theaters, 266–67
Gardener's yards, 265, 266
Gardens, kinds of esthetic pleasure from, example, 8; origin of historic styles, 30; Moorish in Spain, 35; Moghul in India, 36–39; Italian Renaissance and Baroque, 39–42; French, in style of Le Nôtre, 42–44; English Tudor and Elizabethan, 47–49; English cottage, 50; New England colonial, 51; German, 54; Japanese, 55–57; styles of gardens compared to characters of valleys, 63; illusions of shape, 120; illusions of size, 120; views in, 122; as pictorial compositions, 123; flower color in, 163; flower beds in, 177–79; according to plant character, 179; significance of statuary in, 211–12; as type of landscape design, 232;
design, 233–46: definition and use of word, 233–34; esthetic characteristics, 234–37; inclosure, 234–35; plants in, 235–36; unity of effect, 236; recognizably a work of design, 236–37; formal and non-formal arrangements, 237; ways of giving a garden distinctiveness: topography, form, season of greatest beauty, material, association, 237–39; choice of style, 239; composition and compositional elements, 239–46; inclosure materials, 240–42; retaining walls and banks, 240–41; high boundaries, 241; the house as part of garden boundary, 242; " floor " materials, 242–44; typical compositional arrangements of the garden floor, 243–44; objects marking points of interest in the garden composition, 244–46; suitability of different objects to this purpose, 245–46;
the garden in the estate, 249; as affecting house location, 255; design as a unit of the estate, 259–61; in apportionment of estate area, 274; community gardens set aside in land subdivision, 290; *refs.*, 369, 377–82. *See also* Formal gardens
Gardens, Public, carpet bedding in, 182; as part of recreation system, 297
Gardens, Reserve, in the estate, 265–66
Gardens, Rock, 207; bridges in, 218
Gardens, Vegetable, in the estate, 265–66
Gardens, Wall, *ref.*, 373
Gardens, Water, *ref.*, 373
Gardens Old and New, *ref.*, 379
Garlands between posts, as boundary, 170
Gartenkunst, *ref.*, 363
Gartenschönheit, *ref.*, 363
Garzoni (Collodi), Villa, 41; *illus.*, opp. 40
Gate-lodges, 263–64
Gates and gateways, illusion, 117; as elements in landscape design, 209–10; in garden design, 241, 245; from forecourt to service court in the estate, 271; to large landscape parks, 318. *See also* Entrance gates
Gayety, a landscape effect, 82
Gazebos, 196, 197, 262
Gazing-globes, 210, 245, 262
General plans, 345
Generaliffe, 35; *illus.*, opp. 36
Genius, and esthetic analysis in design, 16; in choice of ideal in design, 28
Geniuses, as founders of artistic tradition, 26
" Geometrical " styles of landscape design, 34

Germany, Romantic landscape style in, 47; modern formal style of landscape design in, 51–54; parks, *note*, 226; estates and gardens, *refs.*, 367, 380–81
Gibson, W., *ref.*, 372
Gill, Mary W., *ref.*, 374
Gilpin, Rev. William, *refs.*, 370, 373
Giovio, Villa, 41
Girardin, René Louis, Marquis de, *note*, 47; *ref.*, 370
Githens, A. M., *note*, 194
Glades, composition of informal boundaries of, 167–70
Golf courses, 305–6; *refs.*, 382, 387
Gothein, Marie Luise, *refs.*, 366
Grading plans, 345; example, *illus.*, following 356
Granada, gardens, 35
"Grand style" (Le Nôtre), 33, 42–45
Grandeur, an effect sought in style of Le Nôtre, 42–44; in Romantic landscape style, 46; a landscape effect, 79–81; in sequence of landscape effects, 85
Gravel, as material of roads and paths, 219, 227–28
Gravetye Manor, *illus.*, opp. 30
Great Britain, estates and gardens, *refs.*, 379–80
Greenhouses, 264–65
Greenleaf, James L., *note*, 322; *ref.*, 385
Gridiron street system, in land subdivision, 283
Grilles, as parapet, 200; design, 207–9; in gates, 210
Gromort, Georges, *refs.*, 366, 375, 381, 382
Grottoes, 213–14
Ground, natural forms, as basis of landscape character, 70; as elements in design, 130–50; Repton quotation, *note*, 143; *refs.*, 371
Ground cover, in planting design, 182–83
Ground surface, minor modeling, 147–48; planting in relation to, 183–85; roads in relation to, 219–20. *See also* Topography
Groves, significance of statuary in, 211; on the estate, 268; in the large landscape park, 301–2
Gutters, 219–20, 228

Hamblin, Stephen F., *ref.*, 373
Hamerton, Philip Gilbert, *note*, 81; *refs.*, 368, 375
Hampton Court, 192, 215
Hanslick, E., quoted, 13
Harada, Jiro, *ref.*, 366
Hare, S. Herbert, *notes*, 290, 322; *ref.*, 385
Harger, Wilson G., *note*, 220
Harmony, compositional, and harmony of landscape character, 31; monotony, variety, and, 94; color harmony, 107–10
Harvard College "Yard," 226
Harvard University, School of Landscape Architecture Library, 361
Haussmann, Baron, 45
Hearing, sense of, consideration in landscape design, 7; associational appeal to emotion, 14–15
Hearn, Lafcadio, *note*, 80
Hedges, 48, 199; in planting design, 170–71; in garden design, 240, 241, 242; as screen of service yard, 263
Hegemann, Werner, *ref.*, 389
Herbaceous beds, 176–79. *See also* Flower beds
Herbaceous borders, in inclosing plantations, 168; design, 176–77; against retaining walls, 200; in informal gardens, 261; in vegetable gardens, 265
Herbaceous plants, forms, 153–54; flower color, 162–64; in List of Plants to accompany planting plan for suburban estate near Boston, Mass., 360; in planting design, *refs.*, 371–74
"High-cost" land subdivision developments, 278–80
Highways, state and national, 322
Hills, chosen effect of country house on hill, 86–87; illusions of character, 121; as focal point of vista, 125; typical forms, 131–32; in landscape composition, 132–33; modification of effect by treatment of local details, 133–34; planting to enhance effect, 166; planting in relation to, 184–85; form of buildings, crowning, 192; form, relation of buildings in landscape to, 193; land subdivision on, 283–84
Hillside gardens, Moghul, 36–39; Italian, 39–42
Hillside location of house in estate, 255–56
Hillside lots, 284, 287
Hillside terraces, design, 199
Hilltop location of house in estate, 255–56
Hindu symbolism, in Moghul gardens, 36

Hirschfeld, Christian Cayus Lorenz, 52; *note*, 124; *ref.*, 364
Historic styles of landscape design, *see* Styles of landscape design
History of landscape architecture, *refs.*, 365–67
Holland, gardens, *see* Dutch garden style
Holme, C. Geoffrey, *refs.*, 366, 377
Holme, Charles, *note*, 50; *ref.*, 379
Hopkins, Alfred, *note*, 264; *ref.*, 375
Horticultural Society of New York, *ref.*, 362
Horticulture, 232; Standard Cyclopedia of, *ref.*, 372
Hospital grounds, 232
Hotbeds, 265, 266
Hour of day, as affecting landscape effects, 83
House terraces, relation to the garden, 242; in the estate, 249, 255, 257–58
Houses, planting in relation to, 186–88; the house as part of garden boundary, 242; as an element of the estate, 249, 250–77; effect of interior arrangements on house form, 251–53; form as affected by choice of style, 253; location and orientation, 253–57; relation of garden to, in the estate, 259–61; location in lots in land subdivision, 286–89; location and character restrictions, in land subdivision, 292; country, *refs.*, 374, 375
Housing, low-cost developments, 279–80
Hubbard, Henry V., *notes*, 117, 266, 296, 330, 337; *refs.*, 362, 363, 364, 387, 388
Hubbard, Theodora Kimball, *refs.*, 363, 389
Hue, in color composition, 106–7, 109; in colors in landscape composition, 111
Humanized styles of landscape design, characterized, 30; a category, 34
Hussey, Christopher., *refs.*, 375, 377

Ideals, and beauty, 20; origin, 21; choice in design, 27–28; conscious determination by German landscape designers, 52
Ideation, *see* Intellection
Illusions in landscape design, relation to logical unity of design, 17; in Italian Baroque garden design, 41; of distance, 116; in landscape composition, 116–22; of material, 118–19; of shape, 119–20; of size, 120–21; of character, 121; associational illusions, 121–22
Imagination, sources of pleasure in, 9–10; in design, 28, 341
Impression, esthetic, 19
Impressions, artist's acquisition of, 12
Inclosing plantations, of trees, *note*, 155; design, 167–71; in apportionment of estate area, 274;
informal or naturalistic: in modern American landscape style, 59; in composition, 128; suggestions from pond shore forms, 138; texture considerations, 158; effects of foliage color, 160–61; design, 168–70; avoidance of formal edgings, 171; herbaceous plants in, 176–77; compared to walls and fences, 204
Inclosure, of a landscape composition, 90; of a garden, 234, 240–42
India, Moghul style of landscape design in, 36–39; *refs.*, 366, 367
Individuality, in ideals, 21; in taste, 24–26; in style, 28–29
Informal, indefiniteness of term, 34
Informal design, of American small estates, 59; maintenance, 61; composition dependent on occult balance, 97; pictorial composition, 122; objects in, according to their design value, 128–29; inclosing plantations in, 167–70; specimen trees and shrubs in, 173; shrubs in, 176; statuary in, 212; roads in French so-called informal design, *note*, 225
Informal gardens, 237, 259, 261
Informal styles, a category, 33–34
Intellection, process, 7–8; sources of pleasure in, 10–11; pleasure or displeasure of, in discovery of an illusion, 117–18
Intensity of color, in color composition, 106–7, 109, 110; in landscape composition, 111; in representation on landscape plans, 348
International City Planning Conference, *note*, 296
Iron grilles, in fences and gates, 208–9
Irrigation, in Moghul gardens, 38
Islands, as elements in design, 138; *ref.*, 371
Isola Bella, 41, 120
Italian villas, compared to Moghul gardens, 37; of Renaissance and Baroque periods, styles of, 39–42; their influence in England, 49; associational incongruity in New England, 60; associated pleasure in, 61; demarcation from surroundings, 191; *refs.*, 369, 381–82

James, Harlean, *ref.*, 389
Japanese styles of landscape design, 54–57; spirit of, compared to modern American landscape style, 59; relative scale in, 101; symbolic use of plants in, *note*, 167; *ref.* 366
Jekyll, Gertrude, *note*, 210; *refs.*, 373, 375, 377, 379
Jellicoe, G. A., *ref.*, 382
Jets, fountain, 36, 38, 215, 216
Johnson, George W., *ref.*, 367
Johnson, J. B., *note*, 344
Jones, Beatrix, *ref.*, 370

Kames, Lord, quoted, *note*, 83
Kansas City, Mo., "Country Club District," *note*, 291
Kehr, Cyrus, *note*, 322; *ref.*, 389
Kellaway, Herbert J., *ref.*, 377
Kelsey, Harlan P., *ref.*, 371
Kemp, Edward, *ref.*, 378
Kemp, Frank, *ref.*, 381
Kennion, Edward, *ref.*, 373
Kent, William, 45
Kimball, Fiske, *ref.*, 375
Kimball, Theodora, *note*, 337; *refs.*, 362, 364, 386, 389, 390, 393
Klopstock, Friedrich Gottlieb, 45
Knole, *note*, 49
Knots, 48
Knowles, Morris, *ref.*, 387
Koch, Hugo, *note*, 102; *refs.*, 367, 370, 385

Labor, utilization in landscape construction, 352
Laborde, Alexandre de, *note*, 47
Lakes, effect of large lake compared to that of prairie, 64; apparent extent increased, 117; effects on observer, 136; as elements in design, 137–38; effect of continuity increased, 141
Lamour, Jean, ironwork, 209
Land subdivision, as type of landscape design, 232, 275–94; as a business venture, 275; items of expense to the developer, 275–76;
salable assets produced by development, 276–78: room, 276–77; proximity to town, 277; convenience, 277; social desirability, 277; amenity, 277; beauty, 277–78;
"low-cost" and "high-cost" developments, 278–80; professional advice in, 280; procedure in design, 280–91; choice of type of development in relation to development of city, 280–82; municipal control, 281;
street system, 282–83; alleys, 282–83; characteristic effects of street systems, 283; streets in relation to topography, 283–84; sub-surface utilities, 284; street widths, 284–85; roadways and planting strips, 285; sidewalks, 285–86;
lots, 286–89: sizes, 286; width and depth, 286–87; shape, 287–88; orientation, 288–89;
reserved areas, 289–91; restrictions, 291–93; zoning, 293–94; professional charges of landscape architect, 328; *refs.*, 386–88
Landscape, "free," 68; man's need of, 75
Landscape appreciation, development, 12; quotation from Shaler, 12–13; *refs.*, 368–70
Landscape architect, duty in preservation of characteristic scenery, 74; feeling for main architectural effect, 193–94; as interpreting the client's desires in design of estate, 249; assistance to client in choice of site for estate, 273; professional advice in land subdivision, 280; opportunity in national planning, 323; professional standing, definition, 326; relations with client and contractor, 332–33; coöperation with other practitioners, 333–34, in city planning, 334. *See also* Landscape architecture
Landscape architect's office, 328–29; organization and equipment, 334–37; clerical force, 334–35; technical office and field force, 335–36; office reference material, 336–37
Landscape architecture, definition, 1; province, 1–2; development as a separate profession, 2–3; requirements for profession, 3–4; preparation for profession, 4–5; opportunities and rewards of profession, 5; types of designs, 232;
professional practice in America, 325–37; *refs.*, 392; professional degrees, 325; professional conduct, 325–26; professional charges, 326–28; professional reputation, 328–29; professional advertising and publicity, 329–31; professional announcements, 331; public exhibitions, 331; competitions, 332;

classification, 337; selected list of references on, 361–81
Landscape Architecture, quarterly, *ref.*, 363
Landscape character, defined, 22; interpretation of, 31; illusions of, in composition, 121; relation of plant character to, 165–66; buildings subordinate to, 189–90; park buildings subordinate to, 316; relation to making of roads and paths in the landscape park, 309
Landscape characters, 62–75; emotional effect increased by designers of Romantic landscape style, 46; development in modern American landscape style, 58–59; physical origin, 62–63; as parallel to styles, 63–64; names, 64–65;
examples, 64–70: prairie, 64–65; barren or tundra, 65–66; sand dunes, 66; Sequoia grove, 66–67; Sierra mountain meadow, 67–68; bushy pasture, 68–69; English pastoral landscape, 69–70;
design in, 70–72; in relation to economic use and maintenance, 72–74; effects in, 84–85; roadside planting developed to accord with, 223; character units in design of the estate, 268–69; considered in choice of site for estate, 273;
character units available for the large landscape park, 299–300; park use and, 301; best fitted to park uses, 301–5; pastoral landscape, 301–2; wooded landscape, 302–3; rocks and ledges, 303; brooks and ponds, 303–4; character units separated by park roads, 311
Landscape composition, 88–129; compared with composition in painting, 88–89; within the visual angle, 92; larger unity, 92–93;
characteristics of objects in, 98–129: shape, 98–101; size, scale, and distance, 101–3; texture, 103–4; color, 104–11; light and shade, 111–13; atmosphere and atmospheric perspective, 113–16; illusions in, 116–22; as exemplified in the garden, 239–46;
landscape compositions, 122–29; objects in, according to their design value, 128–29; temporary elements, 129; hill and mountain forms in, 132–33; differentiation of design units by contrast of foliage color, 160; in the landscape park, 305; *refs.*, 370–71
Landscape construction, *see* Construction
Landscape design, theory, 6–23, *refs.*, 368–70; defined, 6; esthetic and economic aspects, 6–7; psychological basis of esthetic theory, 7–16; esthetic analysis in, 16; teaching of, 26; criticism in, 26–27; self-criticism in, 27; value of knowledge of natural forms in, 130–31; use of office force in designing, 335–36;
procedure in design, 338–53; methods in designing, 340–42; sequential decisions in, 340–41; imagination in, 341;
representation of design, 342–51: models, 342–43; pictures and plans, 343; written statements, 343–44; verbal directions and explanations, 345
Landscape designs, types, 231–323, *refs.*, 376–91; classified according to typical uses, 231–32
Landscape effect, defined, 22–23; as a criterion of style and character, 76; and landscape composition, 93
Landscape effects, 76–87; in Japanese styles, 55–56; of prairie, 64; of barren or tundra, 65; of Sierra mountain meadow, 68; taste in, 76; variety of, 77; literary discussions of, 77;
examples, 77–82: the "beautiful" and the "picturesque," 77–79; sublimity, 79–81; desolation, 81; melancholy, 81–82; gayety, 82; mystery, 82–83;
effects from transitory conditions, 83; harmony and contrast, 83–84; effects in landscape characters, 84–85; effects in styles, 85–86; design in effects, 86–87; from hills and mountains, valleys, plains, and bodies of water, 130–37; in the landscape park, Olmsted quotation, *note*, 299; of park scenes, 305. *See also* Emotional effects
Landscape maintenance, *see* Maintenance
Landscape painters, as inspiration of landscape style, 45
Landscape painting, *ref.*, 371
Landscape parks, *see* Parks, Landscape
Landscape reservations, *see* Reservations, Landscape
"Landscape School," 46

Landscape style, Romantic, 45–47; modern American, 57–59; inspiration from English pastoral landscape, 70
Landscape superintendence, *see* Superintendence
Lange, Willy D., *ref.*, 380
Lante, Villa, 40, 209, 215; *illus.*, 23, plates 19, 29
Lanterns, garden, 55, 56
Laprade, Albert, *ref.*, 382
Latham, Charles, *ref.*, 381
Lattices, covered with vines, 170, 172; as building decoration, 188; shelters, 198; fences, 205, 207–9; in garden design, 242
Laundry yard, 263
Lawns, in historic styles of landscape design, 48, 58, 59; shadows on, 112, 113; in composition, 122, 123; suggestions from pond shore forms, 138; composition of informal boundaries, 167–70; in planting design, 183; in the estate, 249; as informal garden, 261; as unit of the estate, 267–68; in apportionment of estate area, 274; *ref.*, 373
Lay, Charles Downing, *note*, 332; *ref.*, 363
Ledges, planting to enhance character, 71; in waterfalls, 142; in naturalistic design, 145–46; steps along, 203; in large landscape parks, 303
Leipzig, Mariannenpark, 226
Le Nôtre, André, his style of landscape design, 29, 33, 42–45, 52; imitators, 44; *note*, 47; *ref.*, 366
Leonardo da Vinci, quoted, *note*, 114
Lettering on landscape plans, 349; composition of, 351
Lewis, Harold M., *ref.*, 389
Lewis, Nelson P., *ref.*, 389
Light, color and, 105–6; as affecting location and orientation of house in estate, 253–57
Light and shade, effect of gayety, 82; as affecting landscape effects, 83; in composition, 111–13; unity in landscape composition, 111–12; variability, 112–13; differentiation of planes of distance, 127; of reflections in pools, 216
Light standards in the large landscape park, 316–17
Line, character of, in representation on landscape plans, 348
Lipps, Theodore, *note*, 14
Literary discussions of landscape effects, 77
Literary influences on landscape design, 46
Lots in land subdivision, salable assets, 276–78; hillside, 284; sizes, 286; width and depth, 286–87; shape, 287–88; orientation, 288–89; restrictions, 291–93
Loudon, John Claudius, *refs.*, 364, 368, 373
Louis XIV, 33, 37, 85
"Low-cost" land subdivision developments, 278–80
Lowell, Guy, *ref.*, 379
Lutyens, E. L., *note*, 49
Lux, J. A., *note*, 52
Lyle, William T., *ref.*, 392

Macadam, as material of roads and paths, 219, 228
Macartney, Mervyn, *note*, 49; *ref.*, 379
Macculloch, quoted, *note*, 81
Mackaye, Benton, *ref.*, 389
Madama, Villa, 40
Maintenance, relation to choice of style, 60–61; landscape characters in relation to, 72–74; relation of planting design and, 153; of roads, *note*, 220; relation to design of estate, 273–74; superintendence of, 353; *refs.*, 392–93
Major, Joshua, *note*, 175
Majorca, gardens, *ref.*, 382
Manning, Warren H., *note*, 322; *refs.*, 362, 382, 389
Manwaring, Elizabeth W., *ref.*, 368
Marcus, Hugo, *note*, 133; *refs.*, 368, 370
Mariannenpark, Leipzig, 226
Marr, John E., *ref.*, 371
Masonry, steps, 204; walls, 205–6
Materials of construction, effect on historic styles of landscape design, 29; illusions of, in composition, 118–19; materials of walls and fences, 205–9; of roads and paths, 227–30; of bridges, 217–18
Matthews, W. H., *ref.*, 373
Mawson, E. Prentice, *ref.*, 378
Mawson, Thomas H., *note*, 210; *refs.*, 364, 375, 378, 390
McMichael, Stanley, *ref.*, 390
McNamara, Katherine, *ref.*, 389
Meadows, composition of informal boundaries, 167–70; Sierra mountain meadow, a landscape character, 67–68

Melancholy, an effect sought in Romantic landscape style, 46; a landscape effect, 81–82
Méréville, *note*, 47
Metropolitan landscape reservations, 318–21
Meyer, Franz Sales, *note*, 176; *ref.*, 364
Migge, Leberecht, 54; *refs.*, 369, 376
Miller, Wilhelm, *note*, 65
Models, as representation of landscape design, 342–43
Moghul style of landscape design in India, 36–39; *note*, 167; *refs.*, 366, 367
Monchow, Helen C., *note*, 293; *ref.*, 387
Monotony, in composition, 94; in planting, caused by too minute variety, 160; Price quotation, *note*, 164
Mont St. Michel, 192
Moore, Charles, *ref.*, 390
Moorish style of landscape design in Spain, 35–36
Morocco, *ref.*, 382
Motoring, provisions for, in the large landscape park, 306
Mountain meadow, Sierra, a landscape character, 67–68
Mountains, symbolic representation in Japanese gardens, 55; giving effect of sublimity, 79; in pictorial composition, 123, 125, 128; typical forms, 131–32; in landscape composition, 132–33
Mounts, in Tudor gardens, 48
Muir, John, *ref.*, 385
Municipal forests, 320–21; treatment with regard to landscape character, 72–73
Municipal landscape reservations, 318–21
Municipal water-supply areas, 321; combination with municipal forests, 72–73
Muscular activity, feelings of, consideration in landscape design, 7; intensification of emotion from, 13–14; inperception of shape, 98
Music, analogy to visual impressions, Hanslick quotation, *note*, 13
Music courts, in the large landscape park, 305
Music groves, in the large landscape park, 302, 305
Muskau, *illus.*, plate 21
Muthesius, Hermann, *note*, 52; *ref.*, 378
Mystery, a landscape effect, 82–83; effect of moist atmosphere, 115; effect in plantations, 168
Nason, Wayne C., *ref.*, 390
National Association of Real Estate Boards, *ref.*, 387
National Conference on City Planning, *notes*, 287, 293; *refs.*, 387, 390
National Conference on Instruction in Landscape Architecture, *ref.*, 362
National Conference on Outdoor Recreation, *refs.*, 385, 386
National Conference on State Parks, *ref.*, 385
National forests, relation to national parks, 322
National highways, 322
National Park Conference, *ref.*, 385
National parks and reservations, 321–22; *refs.*, 384, 385, 386
National planning, 323; *refs.*, 389
Naturalistic design, illusions of character, 121; pictorial composition, 122; ground, rock, and water as elements, 130–50; inclosing plantations, 167–70; specimen trees and shrubs in, 173; tree and shrub groups in, 173–74; shrubs in, 176; ground cover in, 182–83; planting and topography, 183–85; waterside planting, 185–86; steps in, 203–4; statuary in, 212; roads in, 219–24; tree planting along roads in, 223; paths in, 224–25. *See also* Landscape character
Naturalistic styles of landscape design, characterized, 30–31; a category, 34
Nature, inspiration of landscape style, 45–46; inspiration of Japanese styles, 55; man's need of contact with, 75
Nelson, Beatrice Ward, *ref.*, 385
Netherlands, gardens, *ref.*, 367
New England bushy pasture, 68; walls in, 207
New England colonial style of landscape design, 50–51
New York, Central Park, 58; *note*, 308
New York Public Library, *ref.*, 362
Niches, 125, 199, 203; for wall fountains, 213–14; in garden design, 241, 246
Nichols, J. C., *notes*, 291, 293; *ref.*, 387
Nichols, Rose Standish, *ref.*, 367
Night effects in Moghul gardens, 37
Nishat Bagh, 37
Nolen, John, *note*, 279; *ref.*, 390
North-point, on landscape plans, 350, 351
Novelty, effect in composition, 91–92

Occult balance, 97. *See also* Balance
Office of landscape architect, *see* Landscape architect's office
Old-fashioned garden, 238
Olmsted, Frederick Law, Sr., 29, 57, 58; quoted, *notes*, 18, 299; *refs.*, 364, 385
Olmsted, Frederick Law, Jr., quoted, *note*, 82–83; *notes*, 18, 201, 287, 307, 322, 333; *refs.*, 364, 369, 371, 376, 383, 386, 390, 392
Olmsted, John Charles, *refs.*, 371, 373, 384
Olmsted Brothers, *note*, 293; *ref.*, 387
Orangery, at Versailles, 44
Order in composition, objective and subjective, 89–90; forms of, 93–97
Oriental gardening, *ref.*, 366
Orientation, of buildings in groups, 194; of house in estate, 253–55; of lots in land subdivision, 288–89; objects shown on plan, 350
Originality, in design, 28; from topographic conditions in garden design, 238
Outdoor recreation areas, classification, 296–97; relation to the city plan, 297–98

Paint, color of painted buildings in relation to landscape, 195–96; of painted fences, 208
Painter, comparison with landscape designer, 88, 90, 151, 162, 342
Palmieri, Villa, 40; *illus.*, opp. 100
Palos Verdes, *note*, 293
Panels, sunk, 244
Parapets, 199–200; as parts of the garden boundary, 240–41
Paris, Parc Monceau, 212; Alphand's *Promenades*, *ref.*, 384
Park furniture, 316–17
Park reports, *ref.*, 362
Park systems, municipal, classification of outdoor recreation areas, 296–97; their relation to the city plan, 297–98; stability and convertibility of park units, 299; relation to circulatory system of the large landscape park, 308–9
Parks, ethical value, *note*, 17–18; in modern German formal style, 53–54, *note*, 226; in modern American landscape style, 58–59; Downing's editorials, *note*, 57; carpet bedding in, 182; turf in, 183; pavilions in, 197; significance and setting of statuary in, 212; roads, crossings, 222; area reserved for, in land subdivision, 289, 290, 291; the intown park as part of recreation system, 297–98;
the landscape park as a type of landscape design, 232, 295–320; development of landscape character units, 71; planting, F. L. Olmsted, Jr., quoted, *note*, 83; the large landscape park as part of recreation system, 297–98; design of the large landscape park, 298–318; site and available landscape character units, 299–300; extent and seclusion, 300–1; park use and landscape units, 301; landscape characters best fitted to park uses, 301–5; pastoral landscape, 301–2; wooded landscape, 302–3; rocks and ledges, 303; brooks and ponds, 303–4; uses properly served by a landscape park, 305–8; access and entrances, 308–9; circulation, 309–14; roads, 309–11; bridle paths, 311; footpaths, 311–13; interrelation of roads and paths, 313–14; buildings properly serving park uses, 314–16; buildings in relation to the park landscape, 316; minor structures: park furniture, 316–17; boundaries and gates, 318;
refs., 377, 383, 384–86; construction, *ref.*, 392
Parks and Recreation, *ref.*, 363
Parkways, as part of municipal recreation system, 297–98; leading to landscape park entrance, 308; state parkways, 322
Parsons, Mabel, *ref.*, 386
Parsons, Samuel, *note*, 225; *refs.*, 364, 369, 371, 374, 376, 386
Parterres, in style of Le Nôtre, 43; planting design, 180–82; as increasing dominance of buildings in landscape, 191; and terraces, 198
Pastoral landscape, in England, a landscape character, 69–70; peaceful effect, 78; in the large landscape park, 301–2
Pasture, bushy, in New England, a landscape character, 68–69
Paths, in composition, 128; edgings, 171; as increasing dominance of buildings in landscape, 191; texture of walks, 195; along edge of terraces, 199; steps and, 202–4; gates on footpaths, 209; and bridges, 216–17; as elements in landscape design, 218–19; in naturalistic design, 224–25;

form, 224–25; in relation to park traffic, 225; in formal design, 226–27; materials of paths, 227–30; paths in garden design, 243–44, 246; in vegetable and reserve gardens, 265; in the design of the estate, 271–72; in rocky parts of landscape parks, 303; along brooks and ponds in landscape parks, 303–4; relation of path system of the landscape park to city street system, 308; footpaths in the large landscape park, 311–13; interrelation with roads and bridle paths, 313–14; *refs.*, 375. *See also* Bridle paths
Pavilions, *see* Shelters and pavilions
Paving, as man-made rockwork, 143; of roads and paths, 227–30
Peacefulness as a landscape effect, 78
Péan, P., *ref.*, 380
Peets, Elbert, *ref.*, 389
Penshurst, *note*, 49
Perception, process, 7–8; sources of pleasure in, 9–10
Perennials, in flower beds, 178–79
Perfection, in design, 28
Pergolas, 196, 197, 241, 244, 262–63
Periodicals devoted to landscape architecture, *refs.*, 362–63
Persian gardens, influence on Moorish gardens in Spain, 35; on Moghul gardens in India, 36
Perspective, effects of, 102–3
Perspective, Atmospheric, *see* Atmospheric perspective
Perspectives, rendered, suggestion of distance in, 116
Petraia, Villa, 40
Petzold, Eduard, 52
Phillipps, E. March, *ref.*, 381
Photographic surveying, 340
Picnic groves, in the large landscape park, 315
Pictorial composition, *see* Composition, Landscape composition
Pictorial compositions, and landscape character, 71; landscape, 122–25; typical kinds, 123–24; example: the vista, 124–25
Pictorial representation of landscape design, 343
"Picturesque," literary discussions of term as opposed to "beautiful," 77–78; application in design, 78–79; Price's Essay on the, *ref.*, 369
Pink, L. H., *note*, 279
Plains, style of Le Nôtre adapted to, 43; prairies, 64; large, giving effect of sublimity, 79; typical forms and effects, 136; minor modeling of surface, 147–48; form of building on, 192; location of house in estate on, 255, 257
Planes of distance, 115; in composition, 126–28
Plans, as mode of representation of landscape design, 343; series for landscape job, 345–46; as records of ideas and as decorative objects, 346–47; expression of relative importance of objects represented, 348; character of line, 348; color, value, and intensity of color, 348; lettering on, 349; use of color, 349; conventionality of representation, 349; border lines, 350; north-point, 350; orientation of objects on, 350; representation of shadows, 350; composition of title, north-point, notes, etc., 351; uniformity in presentation in office practice, 351; typical drawings for a landscape job: plans for the development of a suburban estate, 355–56 and *illus.*, following
Plant materials of landscape design, *see* Plants, Vegetation
Plant names, standardized, 1917 Official Code, *note*, 357
Plantations, effects of foliage color, 160–61; design, 167–83. *See also* Inclosing plantations
Planting, rock, 145–46, 147; as surface decoration, 179–83; in relation to topography, 183–85; waterside, 185–86; in relation to architectural structures, 186–88; as enframement, 186–87; as transition between ground and structure, 187–88; as decoration of structures, 188; of terrace banks, 200–1; of walls, 206; on and along fences, 207–9; of grottoes, 213; of pools, 216; in relation to bridges, 217; at road intersections, 221; enframing views along roads, 222; roadside, 223–24; in stone slab paths, 230
Planting design, 151–88; time element in, 152; relation to maintenance, 153; *refs.*, 371–74. *See also* Gardens, Estates, Parks

Planting lists, 345; example, List of Plants to accompany planting plan for a suburban estate near Boston, Mass., 357–60
Planting plans, 345; intellective pleasure in production of, 11; example, *illus.*, following, 356
Planting strips, 223; on streets in land subdivision, 285
Plants, as material in landscape design, 151–52; characteristics, in landscape design, 153; forms, 153–57; texture, 157–58; color, 159–64; species and character, 164–65; individual character, 165; character and environment, 165; relation of plant character and landscape character, 165–66; " expression " and character, 166; association and symbolism, 166–67; grouping according to character in herbaceous beds, 179; in the garden, 235–36; individual beauty in informal garden, 237; choice of, as giving distinctiveness to garden, 238. *See also* Herbaceous plants, Shrubs, Trees
Platt, Charles A., *note*, 61
Platting, in relation to choice of land development, 281; municipal control, 293
Playfields, as part of recreation system, 297–98; relegation to, from landscape park, of noisy sports, 306–7
Playground and Recreation Association of America, *refs.*, 386, 393
Playgrounds, as type of landscape design, 232; area reserved for, in land subdivision, 289; in block centers, 290; as part of recreation system, 296–98; relation to landscape parks, 307; *refs.*, 384–86
Pleached arbors, 48
Pleasure, final product of esthetic design, 7; kinds, 8; sources of, in sensation, 8–9, in perception and imagination, 9–10, in intellection, 10–11; beauty and, 20; from repetition, sequence, and balance in composition, 97; intellective, in discovery of illusions, 117–18
Pleasure buildings in the estate, 249
Poggio a Cajano, Villa, 40
Poles and wires, considerations in land subdivision, 284; restrictions as to location, 293
Ponds, in composition, 121, 123; as elements in landscape design, 137–38; bowlders on shores, 145; shore planting, 185–86; in large landscape parks, 303–4
Pools, in historic styles of landscape design, 36, 40, 41, 43, 48; in composition, 117, 119, 123, 128; enframed by steps, 203; as elements in landscape design, 215–16; in garden design, 241, 243–44
Pools, swimming, on the estate, 266; as part of recreation system, 297
Pope, Alexander, 45
Portugal, *ref.*, 382
Post-finials, 210
Potting sheds, 264, 265
Practice, professional, of landscape architecture, *see* Landscape architecture, professional practice
Prairie, a landscape character, 64–65
Pray, James Sturgis, *refs.*, 383, 390
Preliminary plan, 345; example, *illus.*, following, 356
Preservation of scenery, 74–75
Price, Sir Uvedale, 52; quoted, *notes*, 89, 113, 173–74; *refs.*, 369, 370
Professional practice of landscape architecture, *see* Landscape architecture, professional practice
Profiles, 345; example, *illus.*, following, 356
Progression, in composition, 96
Promenades, relation to the large landscape park, 305–6, 307–8, 315
Psychological basis of esthetic theory of design, 7–16
Public buildings, grounds as type of landscape design, 232; avoidance in landscape parks, 314
Public gardens, carpet bedding in, 182; as part of recreation system, 297
Publicity, in professional practice of landscape architecture, 329–31; *ref.*, 392
Pückler-Muskau, Hermann Ludwig Heinrich, Fürst von, 47, 52, 225; *ref.*, 365
Purdom, C. B., *ref.*, 390
Purdy, Lawson, *ref.*, 389

Railroad-gardening, *refs.*, 383
Ramps, 191, 202
Ramps, water, 41, 214–15
Random rubble masonry, 118
Rannoch, moor of, quotation, *note*, 81
Real estate expert, and landscape architect, 280
Real estate subdivision, *see* Land subdivision

Recreation, man's need of, 295–96
Recreation areas, out-door, classification, 296–97; relation to the city plan, 297–98; *refs.*, 384–86
Recreation centers, as part of recreation system, 297–98
Reed, Lieut. Henry A., *note*, 340
Reference material, in the landscape architect's office, 336–37
References on landscape architecture, 361–93
Reflections, in water surfaces in landscape, 137; of planting in water surfaces, 185–86; in formal pools, 215–16; of bridges, 217
Regional Plan of New York and Its Environs, *ref.*, 388
Regional planning, 319; *refs.*, 388–91
" Regular " styles of landscape design, 34
Rehmann, Elsa, *ref.*, 378
Renaissance villas in Italy, style of, 39–42
Repetition, in composition, 94; sequence of, 94–95; intensification of emotion from, 97–98; of shapes in composition, 100; of textures in composition, 104; in color composition, 109; in mountain forms, 133; in garden design, 236–37
Representation of landscape design, 342–51; example: presentation of landscape plans, 346–51; conventionality of, on plan, 349
Repton, Humphrey, quoted, 11; *note*, 45; style of, 47, 49, 52; *note*, 58; quoted, 93; quoted, *note*, 143; *note*, 267; *refs.*, 365, 369, 371
Reputation, professional, of landscape architect, 328–29
Reservations, Forest, *see* Forests
Reservations, Landscape, combination with municipal forests, treated with regard to landscape character, 72–73; as type of landscape design, 232; need for, 295–96; as part of recreation system, 297–98; Municipal and Metropolitan, 318–21; combination with other uses, 320–21; State and National, 321–22
Reservations, Water-supply, 72–73, 321
Reserve gardens, in the estate, 265–66
Reserved areas, in land subdivision, 289–91
Reservoirs, *ref.*, 386
Restaurants, in the large landscape park, 315
Restrictions in land subdivision, 291–93; *refs.*, 386, 387
Retaining walls, *see* Walls, Retaining
Rhythm, in composition, 95–96; in color composition, 108, 110
Riding, provision for, in the large landscape park, 306
Ries, Friedrich, *note*, 176; *ref.*, 364
Rivers, entering lakes, 138; as elements in landscape design, 140–42. *See also* Streams
Roads, as example of sequence, 94–95; banks, 149; as increasing dominance of buildings in landscape, 191; and bridges, 216–17; as elements in landscape design, 218–24, 225–29; in naturalistic landscape, 219–24; form, 220–21; intersections, 221–22; views of and from, 222–23; planting, 223–24; as demarcating design units, 223–24; paths along, 224; in formal design, 225–26; materials of roads, 219, 227–29; approach roads in the estate, 269–71; relation of road system of the landscape park to city street system, 308; in large landscape parks, 309–11, interrelation with paths, 313–14; *refs.*, 375, 376. *See also* Streets
Robinson, Charles Mulford, *notes*, 282, 329; *refs.*, 387, 391, 392
Robinson, William, *refs.*, 369, 374, 377, 378
Rock, natural forms as elements in design, 130–50; *refs.*, 371
Rock gardens, 207, 238; bridges in, 218
Rock planting, 143, 147, 166, 206–7, 230
Rocks, in waterfalls, 142; in naturalistic design, 143–47; color and texture, 146; in large landscape parks, 303
Rockwork, in grottoes, 214
Roland Park, Baltimore, Md., 280; *note*, 293
Romantic landscape style, 45–47; name, 33; compared with modern German formal style, 54; comparison with Japanese styles, 55; *notes*, 77, 167
Romantic styles, a category, 33
Rome, St. Peter's, *illus.*, opp. 122
Rome, Ancient, sculptural remains in Italian gardens, 39
Ross, Dr. Denman W., *note*, 93; *quoted*, 94–96
Rousseau, Jean Jacques, 46
Roux-Spitz, M., *ref.*, 380
Ruins, in Romantic landscape style, 46; as associational illusions, 121
Rural planning, *refs.*, 388–91
Rustic-work bridges, 218

Sailing ship, example of esthetic from economic unity, 18
St. Catherine's Court, Somerset, *illus.*, opp. 48
St. Cloud, 44
St. Germain, 44
Salem, Nichols garden, *illus.*, plate 5
Salisch, Heinrich von, *ref.*, 374
Sand dunes, a landscape character, 66
Santayana, George, *quoted*, 20; *note*, 21
Sargent, C. S., *refs.*, 362, 374
Satellite towns, *refs.*, 390, 391
Scale, in Japanese garden design, 55, 56; in composition, 101–3; absolute and relative, 101; indication in landscape composition, 101–2; steps as giving, 201
Scale relation, between rock and planting, 147; between texture and form in plants, 157; in carpet bedding, 181; of objects in garden design, 246; of shelters and house as part of same composition, 262
Scenery, characteristic, value and preservation, 74–75. *See also* Landscape
Scent, in garden design, 14–15, 35, 37
Schneider, Camillo Karl, 52; *ref.*, 369
Schools, area reserved for, in land subdivision, 289–90
" Schools," of design, 25–26
Schools, professional, study of landscape architecture in, 4
Schultze-Naumburg, Paul, *note*, 52; *ref.*, 378
Sckell, Friedrich Ludwig von, 47, 52
Scopoli, L., *ref.*, 381
Scotland, gardens, *ref.*, 380
Scott, Geoffrey, *note*, 79
Screen, wall or fence, as, 204; composed of separate objects seen in perspective, 235; of service yard, 263
Screen plantations, 104, 170, 184; around garden, 235–36
Sculptor, comparison with landscape designer, 90, 151, 152, 342
Sculpture, *see* Statuary
Sea, effect compared to that of prairie, 64; giving effect of sublimity, 79; effect of infinity, 136; *ref.*, 371
Seashore planting, 165
Season, as affecting landscape effects, 83; as giving distinctiveness to garden, 238
Seats, in German gardens, 54; in composition, 125, 128; in garden design, 241, 246, 262; in the large landscape park, 316–17
Seavey, Frances Copley, *ref.*, 383
Seclusion, effect of valleys, 135; effect sought in the large landscape park, 300–1
Sedding, John D., *ref.*, 378
Sedgwick, Mrs. Mabel Cabot, *ref.*, 374
Sensation, process, 7–8; sources of pleasure in, 8–9
Sequence, in composition, 94–96; of continuation or repetition, 94–95; intensification of emotion from, 97–98; of shapes in composition, 100; of textures in composition, 104; in color composition, 110; in mountain forms, 133; in valleys, 134; between ground and structure, obtained by planting, 187–88; in garden design, 236–37
Sequoia grove, a landscape character, 66–67
Service areas, in the estate, 249, 252, 255, 263–66
Service buildings, in the estate, 249, 263–64; in the large landscape park, 314–15
Service courts, 263, 271
Service traffic, on the estate, 270–72; in parks, 309–10
Set back restrictions, in land subdivision, 293
Sewage considerations, in land subdivision, 284
Shade, use in historic styles of landscape design, 35, 36, 41; along roads, 223. *See also* Light and shade
Shadows, in pastoral landscape, 70; color in distance, 114–15; as enframement, 126–27; making interest in ground surface, 148; in interior of trees, 159; in reflections of waterside planting, 185; of trees on buildings, 188; representation on landscape plans, 350
Shakespeare garden, 239
Shaler, Nathaniel Southgate, *quoted*, 12; *note*, 92; *refs.*, 369, 371
Shape, in composition, 98–101; individuality through, in landscape composition, 99–100; value of shapes and their arrangement in composition, 100–1; scale relation of texture to, 103–4; illusions of, in composition, 119–20; in plant materials, 151; in inclosing plantations, 168–69; as giving individuality to plants, 172; in tree and shrub groups, 175; in carpet bedding, 180–82; of

buildings in relation to topography, 189–90; of buildings dominating landscape, 191; of buildings in relation to landscape, 192–94; harmony of buildings in groups, 194; of bridges, 217–18; as giving distinctiveness to garden, 238
Shardeloes, Repton quotation, 93
Shaw, Albert, *refs.*, 389, 390
Shelters and pavilions, in historic styles of landscape design, 37, 38, 54, 56; in composition, 125, 128; hilltop, 134; as elements in landscape design, 196–98; on terraces, 199; in garden design, 241, 242, 244, 246; in design of the estate, 261–62; in the large landscape park, 315–16
Shelton, Louise, *ref.*, 379
Shepherd, J. C., *ref.*, 382
Shopping centers, space reserved for, in land subdivisions, 290
Shores, as elements in design, 138–40; planting, 185–86
Shrubs, trained, in Japanese gardens, 55; in composition, 126, 128; forms, 153–54; winter color, bark, and fruit, 162; masses in flower, 164; avoidance of excess of variety in plantations, quotation from Price, *note*, 164; specimens in planting design, 171–73; groups, in planting design, 173–75; composition of groups, 174–75; shrub beds, 175–76; planting in relation to topography, 183–85; as waterside planting, 185; as transition between ground and structure, 187–88; clipped, as increasing dominance of buildings in landscape, 191; as enframing steps, 203; along roads, 223; inadequate as central feature in formal garden, 237; as screen of service yard, 263; in street planting strips, 285; in the large landscape park, 301–2; in List of Plants to accompany planting plan for suburban estate near Boston, Mass., 357–59; in planting design, *refs.*, 371–74. *See also* Inclosing plantations
Shurtleff, Flavel, *ref.*, 392
Sidewalks, in land subdivision, 285–86
Sierras (California), Sequoia grove, 66; mountain meadow, 67–68; *illus.*, *Frontispiece*, plates 7, 8, 23, 24
Sieveking, Albert Forbes, *ref.*, 367
Sight, sense of, consideration in landscape design, 7; in perception of shape, 98; in perception of texture, 103
Signs, guide, in the large landscape park, 317
Silhouette, of landscape composition against twilight sky, Price quotation, *note*, 113; of buildings in landscape, 193
Simonds, O. C., *ref.*, 365
Sincerity, in design, 17
Sion House, Brentford, *illus.*, plate 26
Site, choice for an estate, 273–74; for a large landscape park, 299–300
Sitwell, Sir George, quoted, 11; quoted, *notes*, 15, 103; *refs.*, 369, 376
Size, and sublimity, 79; in composition, 101–3; scale relation of texture to, 103–4; differentiation of planes of distance, 127; harmony of buildings in groups, 194
Skating, provision for, in the large landscape park, 305
Skating ponds, as part of recreation system, 297
Ski-jumping, provision for, in the large landscape park, 305–6
Sky, as affecting landscape character of prairie, 64; color, 114; as element in landscape composition, 129
Smell, sense of, consideration in landscape design, 7; associational appeal to emotion, 14–15
Solly, V. N., *ref.*, 378
Spain, Moorish style of landscape design in, 35–36; *refs.*, 367, 382
Specifications and contracts, 344
Specimen trees, in composition, 123; in relation to inclosing plantations, 169; in planting design, 171–73; specimen evergreens as building decoration, 188
Speedways, relation to the large landscape park, 310
Sports and games, areas for, in the estate, 249, 266–67; *note*, 274; in the large landscape park, 305–7
Spring foliage, 159
" Squares," as part of recreation system, 297
Stables, 263
Standards of beauty, not universal, 20–21
State forests, *refs.*, 385, 386
State highways, 322
State parks and reservations, 321–22; *refs.*, 384, 385, 386

Statuary, in historic styles of landscape design, 39–40, 43, 53; in composition, 117, 125; shelters over, 197; enframed by steps, 203; as an element in landscape design, 210–13; value among decorative objects in design, 211–12; setting in landscape composition, 212–13; in fountains, 215; in garden design, 245–46, 260; in the large landscape park, 317
Steel, structural, as bridge material, 217
Steele, Fletcher, *ref.*, 379
Stein, Henri, *ref.*, 367
Stepping stones, 225
Steps, in English Tudor gardens, 48; as increasing dominance of buildings in landscape, 191; texture, 195; in terrace walls and banks, 199–201; as elements in landscape design, 201–4; in formal design, 201–3; in naturalistic design, 203–4; gates and, 210
Stone, imitations, 118–19; texture and color of buildings in relation to landscape, 195; in walls, 205–6; statuary, 212; bridges, 218; stone slabs as material of garden paths, 229
Stone, Broken, as material of roads and paths, 219, 228
Stones, in Japanese gardens, 55, 56
Stourton, Wilts, *illus.*, plate 28
Stowe, 46
Streams, illusions of extent, 117; of character, 121; as elements in design, 140–42; apparent importance increased, 142–43; bowlders in, 145; in large landscape parks, 303–4
Street systems, in land subdivision, relation to city plan, 282–83; characteristic effects, 283; of cities, relation to circulatory system of the large landscape park, 308
Streets, in land subdivision, relation to topography, 283–84; sub-surface utilities, 284; street widths, 284–85; roadways and planting strips, 285; sidewalks, 285–86; reserved triangles at intersections, 290. *See also* Roads
Structures, design, in relation to landscape, 189–230; *refs.*, 374–76
Structures, Architectural, planting in relation to, 186–88: as enframement, 186–87; as transition between ground and structure, 187–88; as decoration of structures, 188; vines and, *ref.*, 372
Stuart, C. M. Villiers, *note*, 36; *ref.*, 367
Stucco, 118; color of buildings in relation to landscape, 195; walls, 206
Study of landscape architecture in professional schools, 4
Stübben, J., *ref.*, 391
Style, taste and, 22; individual, 28–29; choice of, 60–61; border land of landscape style with landscape character, 70; choice, for garden, 239
Style, Architectural, and form relations of buildings in landscape, 193–94; and building texture, 195; house form as affected by choice of, 253
Styles of landscape design, 32–61; humanized and naturalistic, 30–31; study of, 59–60; landscape characters as parallel to, 63–64; effects in, 85–86;
historic styles: origin, 29–30; origin and names, 32–33; categories, 33–35; examples, 35–59: Moorish in Spain, 35–36; Moghul in India, 36–39; Italian Renaissance and Baroque villas, 39–42; Le Nôtre, 42–45; Romantic landscape style, 45–47; English Tudor formal, 47–49; English cottage, 49–50; New England colonial, 50–51; modern German formal, 51–54; Japanese, 54–57; modern American landscape style, 57–59; *refs.*, 365–67
Sub-surface utilities, *note*, 220; of streets in land subdivision, 284
Sublime, Price's Essay on the, *ref.*, 369
Sublimity, effect of Sequoia grove, 67; a landscape effect, 79–81
Sundials, 128, 195, 210; in garden design, 245–46, 262
Sunk panels, 244
Sunrise and sunset colors, cause of, 114
Superintendence, need for designing skill in, 341–42; superintendence of construction, 351–53; of maintenance, 353
Surface decoration, planting as, 179–83; of walls, 205–7; roads and paths as, 225–30; of garden "floor," 242–44
Surprise, effect in composition, 91–92
"Surprise" features, in Italian and older German gardens, 10
Surveying, 339–40

Swaelmen, Louis van der, *ref.*, 391
Swimming, provision for, in the large landscape park, 305
Swimming pools, on the estate, 266; as part of recreation system, 297
Symbolism, in Moghul gardens, 36; in Japanese styles, 55–56; of plants, 166–67
" Symmetrical " styles of landscape design, 34
Symmetry, and balance, 97; illusions of, 120
Symonds, J. A., quoted, *note*, 26–27
Sypesteyn, C. H. C. A. van, *ref.*, 367
Syracuse University. School of Citizenship and Public Affairs, *ref.*, 388

Tables, garden furniture, 54, 262
Tabor, Grace, *notes*, 51, 57; *ref.*, 367
Taj Mahal, 36, 39; *illus.*, plate 1
Takata, Takekatzu Uenoru, *note*, 57
Tan bark, as bridle path material, 227
Tanzer, Helen H., *ref.*, 367
Tar, as material of roads and paths, 228
Taste, and style, 22; individual and community, 24–25; development, 25–26; teaching and, 26; in landscape effects, 76
Taste, sense of, consideration in landscape design, 7; associational appeal to emotion, 14–15
Taylor, A. D., *notes*, 274, 337; *refs.*, 374, 393
Taylor, Alexander S., *note*, 293
Taylor, Graham Romeyn, *ref.*, 391
Tea houses, 197
Teaching of design, 26
Telford, as material of roads and paths, 228
Temples, garden, 262
Tennis courts, in the estate, 266, 274; in the large landscape park, 305–6
Terra-cotta walls, 206
Terraces, in historic styles of landscape design, 37, 40, 48; as increasing dominance of buildings in landscape, 191; as base for buildings, 193; as elements in landscape design, 198–201; terrace banks, 200–1; and steps, 201–3; relation to house on hillside, 256; flower-decorated, 259. *See also* House terraces
Texture, as modifying shape composition, 101; in composition, 103–4; scale relation to size and shape, 103–4; illusions of, difficult, 117; differentiation of planes of distance, 127; of rocks, 146; interest in ground surface, 148; of plant materials, 151; in topiary work, 156; in planting design, 157–58; in inclosing plantations, 168–69; of hedges, 170; of edgings, 171; as giving individuality to plants, 172; in tree and shrub groups, 175; carpet bedding as, 180; of turf, 182; of vines on structures, 188; texture harmony of buildings with landscape, 190; of buildings dominating landscape, 191; harmony of buildings in groups, 194; texture relations of buildings and landscape surroundings, 194–95; of steps in landscape, 204; of walls, 205–6; in materials of roads and paths, 227–30
Theaters, garden, 266–67
Theaters, outdoor, 305; *ref.*, 376
Theory of design, *see* Design, Landscape design
Thomas, F. Inigo, *refs.*, 368, 377
Thomas, George C., Jr., *ref.*, 382
Thompson, F. Longstreth, *ref.*, 388
Thompson, James, 45
Thoresby House, Wilts, *illus.*, plate 10
Tiles, in Moghul gardens, 38; in pools, 216; as material of roads and paths, 229
Tipping, H. Avray, *ref.*, 380
Titles, on landscape plans, 351
Tobogganing, provision for, in the large landscape park, 305–6
Topiary work, individuality of shape, 99–100; plant form in, 156–57; in garden design, 245–46
Topographic data for landscape design, 339–40
Topographic map, preparation, 339; example, *illus.*, opp. 356
Topography, effect on historic styles of landscape design, 29; in English cottage style, 50; flat, influencing German park design, 54; consideration in Japanese styles, 56; as motiving modern American landscape style, 58; planting in relation to, 183–85; adaptation of buildings to, 189–90; relation of steps to, 203; bridge forms in relation to, 218; roads in relation to, 219–20; paths in relation to, 224–25; causing originality in garden design, 238; as affecting location and orientation of house in estate, 253–57; streets in relation to, in land subdivision, 283–84; relation of park

paths to, 312–13; influence on layout of land subdivisions, *ref.*, 387
Torrey, Raymond H., *ref.*, 386
Touch, sense of, consideration in landscape design, 7; in perception of shape, 98; in perception of texture, 103
Tradition, in design, 25–26
Traffic, steps and, 201–4; gates and, 209–10; and bridges, 216; roads and paths, 219–30; service and pleasure, in relation to house location, 254–55; considerations of, in design of estate, 269–72; consideration in land subdivision, 282–86; in relation to planting of the large landscape park, 301–4; relation to circulation in the large landscape park, 308–14
Training, for professional practice of landscape architecture, 4–5; and attraction of attention in landscape composition, 91
Trees, Moghul symbolism, 36; in Italian villas, 42; in style of Le Nôtre, 44; in Romantic landscape style, 46; in English Tudor style, 48; in Japanese gardens, 55; in modern American landscape style, 59; in landscape characters, 66, 69, 70; giant, giving effect of sublimity, 66–67, 79–80; use in municipal forests treated with regard to landscape character, 72–73; in landscape composition, 99–100, 102, 123, 125, 126; forms, 153–54; classes of forms and their uses in design, 154–55; in relation to stages of growth, quotation from *Garden and Forest*, *note*, 155; form the expression of mode of growth, 155–56; winter form, 156; in topiary work, 156–57; winter color, bark, and fruit, 162; personification, 166; design of tree masses, 167; specimen trees in planting design, 171–73; forms suitable for specimens, 172; tree groups, in planting design, 173–75; composition of groups, 174–75; clipped trees on parterres, 181; planting in relation to topography, 183–85; trees as enframement of structures, 186–87; clipped trees increasing dominance of buildings in landscape, 191; form relation of trees to buildings in landscape, 193; in building groups, 194; enframing steps, 203; along roads, 223; inadequate as central feature in formal garden, 237; formal arrangement in garden, 245–46; woods on the estate, 268; planting along roads in estate, 269; in street planting strips, 285; planting in the large landscape park, 302–3; planting along park roads, 311; in List of Plants to accompany planting plan for suburban estate near Boston, Mass., 357–59; in planting design, *refs.*, 371–74. *See also* Inclosing plantations
Trellises, vine, 172; lattice fences as, 208
Triggs, H. Inigo, *note*, 77; *refs.*, 367, 380, 382
Tub plants, in style of Le Nôtre, 44; as building decorations, 188; in garden design, 245–46
Tudor formal style of landscape design in England, 47–49
Tundra, a landscape character, 65–66
Tunnels, for roads crossing at separated grades, 222
Turf, in English Tudor style, 48; in English pastoral landscape, 70; in planting design, 182–83; on terrace banks, 200–1; gutters, 220; paths, 225, 230; in garden design, 243–44; areas for sports and games on estate, 266; in landscape parks, 301
Turf panels, 227, 230, 245–46
Turnarounds, *see* Forecourts, Roads, Service courts
Twilight, as bringing out composition of landscape, 113
Types, defined, 21
Types of landscape designs, 231–323; *refs.*, 376–77
Tyrrell, Henry Grattan, *note*, 217; *ref.*, 376

Udine, Jean d', *note*, 14
Ugliness, definition, 20
Underwood, Loring, *ref.*, 376
United States, early styles of landscape design in, 57; estates and gardens, *refs.*, 379. *See also* headings beginning with word National
U. S. Bureau of Industrial Housing and Transportation, *ref.*, 388
U. S. Department of Commerce, *refs.*, 391
United States Housing Corporation, *ref.*, 388
United States Shipping Board, *ref.*, 388
Unity, of objects, 9; importance in design, 10; as completeness of organization, 16–17; logical, 17; ethical, 17–18; economic, 18; esthetic, 19; and attention, 90

University buildings, *refs.*, 382
University of California plan, *ref.*, 382
Unwin, Raymond, *note*, 289; *refs.*, 388, 391
Urns, 210; in garden design, 245–46
Uyehara, Keiji, *ref.*, 365

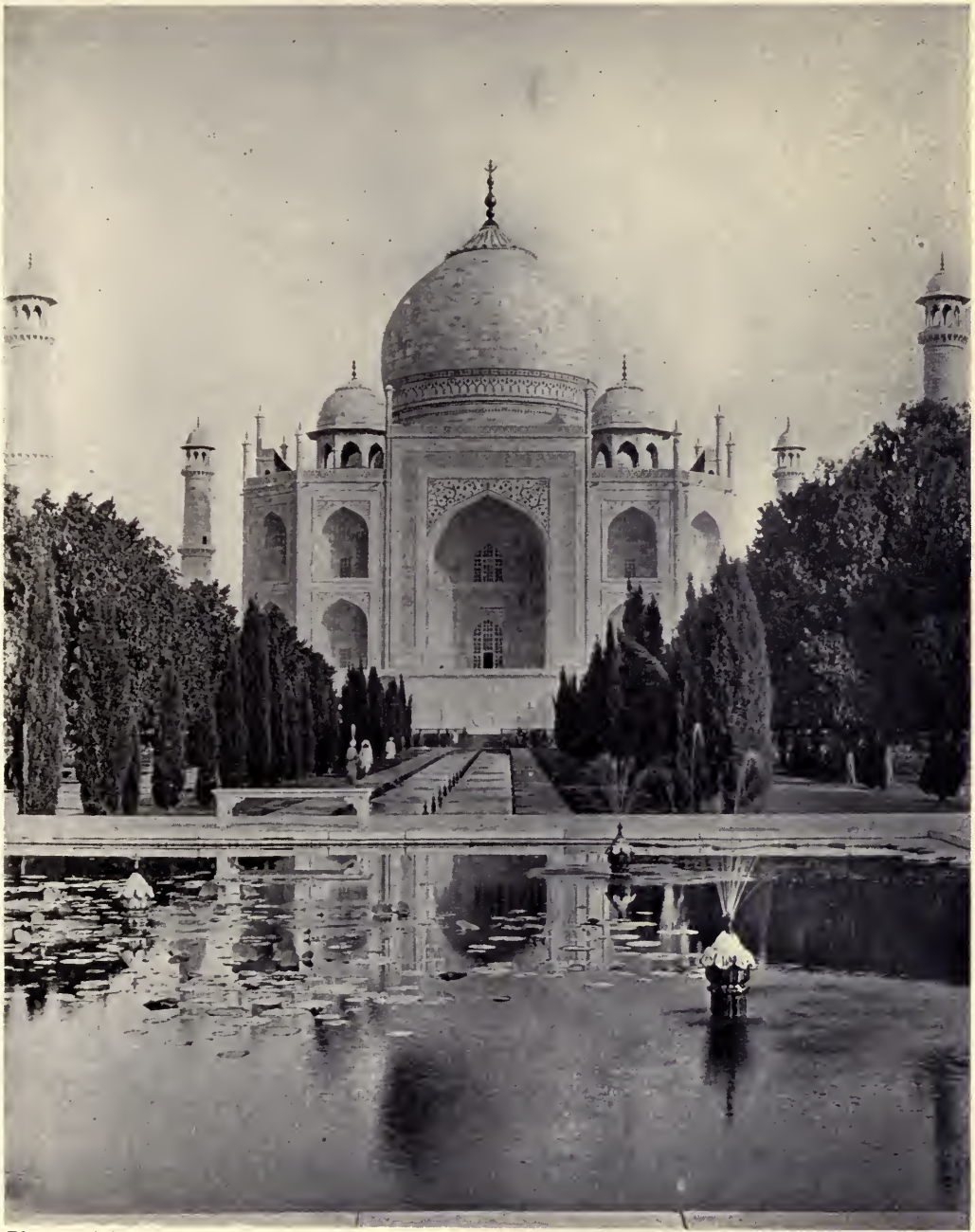
Vacherot, J., *ref.*, 377
Valleys, landscape characters of, 62–64; typical forms, 134–35; choice of viewpoint for completeness of effect, 135–36; location of house in, 255, 257
Value, color, in color composition, 106–7, 109; in landscape composition, 111; in representation on landscape plans, 348
Van Pelt, J. V., *note*, 116
Van Rensselaer, M. G. (Mrs. Schuyler), *refs.*, 362, 365, 376
Variety, in composition, 94; excess in planting to be avoided, 160; quotation from Price, *note*, 164
Vases, 181, 210; in garden design, 245–46; 261
Vaux, Calvert, 57, 58
Vaux-le-Vicomte, 42, 44
Vegetable gardens, 51; in the estate, 265–66
Vegetation, effect on historic styles of landscape design, 29; as motiving Italian styles, 42; importance in modern American landscape style, 58–59; as basis of landscape character, 65, 66, 68–69, 70; element in landscape design, 151–88; *refs.*, 371–74. *See also* Plants
Verbal directions and explanations, of landscape design, 345
Versailles, 129, 192, 199; as example of style of Le Nôtre, 42–44; sequence of landscape effects in Chateau, Grand Trianon, Petit Trianon, and Hameau, 85–86; *illus.*, opp.: 44, 78, 80, 82, 84, 196
Viewpoints, developed in design of Japanese gardens, 56; for composition dominated by mountain, 133; on hill, treatment, 134; choice of, for completeness of effect of valley, 135–36; land for, turned over to city in subdivision scheme, 291; as part of recreation system, 297
Views, treatment, in historic styles of landscape design, 39, 42, 55, 56; from bridges, enframement by planting, 187; dominated by buildings, 192; gazebos dominating, 197; from terraces, 198–200; from top of steps, 203; bounded by walls or fences, 204; of and from bridges, 217; concealment of road crossing view, 219; of and from roads, 222–23; from garden, considered in its design, 234–35, 241; as affecting location and orientation of house in estate, 253–57; development of open view in design of estate, 267, not to be interrupted by roads, 269–70; from and into the large landscape park, 300–2
Vignal, Pierre, *refs.*, 375, 381
Village planning, *ref.*, 390
Villas, Italian, *see* Italian villas
Vinci, Leonardo da, quoted, *note*, 114
Vines, on lattices, as inclosure, 170; on free-standing trellises, 172; as building decoration, 188; subordinating structures to landscape, 190, 198; on walls, 206; on fences, 208; *ref.*, 372
Vistas, treatment, in historic styles of landscape design, 40, 43, 44; object terminating, made sufficient by being in strong light, 112; as a typical example of a pictorial composition, 124–25; gates as termination of, 209; in garden design, 241, 245–46; in land subdivision design, 283, 290
Visual angle, a consideration in landscape composition, 92
Vogel, Lucien, *ref.*, 382

Wading pools, as part of recreation system, 297
Wainwright, Shirley B., *ref.*, 377
Walks, *see* Paths
Wall fountains, 213–14; in garden design, 241, 246
Wall gardens, 238, *ref.*, 373
Wall planting, 143, 170, 206–7
Walls, English Tudor, 48; in composition, 128; illusions of material, 118; as man-made rock arrangement, 143; texture, 195; pavilions as part of, 197; as elements in landscape design, 204–7; materials and decoration, 205–7; gates in, 209–10; in garden design, 240, 241, 242; of forecourts, 258; as screen of service yard, 263; restrictions in land subdivision, 293; as park boundary, 318

Walls, Retaining, of terraces, 198, 199; as elements in landscape design, 200; steps in, 202–3; as part of garden boundary, 235, 240–41
Water, use in historic styles of landscape design, 36, 38, 39, 41, 55; natural forms as elements in design, 130–50, *refs.*, 371; architectural and sculptural water features, 213–16, *ref.*, 376
Water bodies, their effects, 136–37; lakes, 137–38; shores and beaches, 138–40; streams and stream banks, 140–42; waterfalls, 142–43
Water fowl, on park ponds, 304
Water gardens, *ref.*, 373
Water planting, in pools, 216
Water-ramps, 41, 214–15
Water-supply reservations, municipal, 321; combination with municipal forests, 72–73
Waterfalls, in Japanese gardens, 55; different effects, 84; as elements in landscape design, 142–43
Waterside planting, 166, 185–86; in landscape parks, 303–4
Waugh, Frank A., *refs.*, 370, 376, 377, 391
Weather, as affecting landscape effects, 83
Weathers, John, *ref.*, 374
Weaver, Lawrence, *notes*, 49, 210; *ref.*, 377
Weir, L. H., *refs.*, 383, 386
Whately, Thomas, *note*, 47; *refs.*, 365, 374
Wheelwright, Robert, *note*, 308; *ref.*, 363
Whitten, Robert, *ref.*, 388
Wiepking-Jürgensmann, Heinrich Fr., *ref.*, 381
Wilhelmshöhe, 47, 79, 215
Williams, Frank Backus, *ref.*, 391
Wilson, Ernest H., *ref.*, 383
Wind, as affecting landscape character, 64, 65, 66; on water surfaces, 137
Windbreaks, 170
Window-boxes, as building decoration, 188
Winter effects, tree form, 156; color of trees and shrubs, 162; of plantations, 184; of garden visible from house, 260
Wires and poles, considerations in land subdivision, 284
Woche, Die, ref., 381
Wooden bridges, 218
Woods, *note*, 155; planting design, 167; in the estate, 249, 268; in the large landscape park, 300–3; roads and paths through, 311–14
Works of art, basis of permanent appeal, 15
Wright, Richardson, *ref.*, 377
Writing, as means of professional publicity, 329
Written statements, in representation of landscape designs, 343–44

Yard, Robert Sterling, *ref.*, 386
Yeomans, Alfred B., *ref.*, 388
Yosemite, 321; *illus.*, plates, 12, 13, 14

Zoning, in relation to choice of land development, 281; and land subdivision, 293–94; *refs.*, 389, 291
Zoölogical parks and gardens, 232; relation to the large landscape park, 305–6, 307–8, 315; *refs.*, 383



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PLATE 2. — ROUSSEAU'S TOMB, THE ISLE OF POPLARS, ERMENONVILLE



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PLATE 3. — A BRIDGE, ERMENONVILLE



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PLATE 4. — THE TEMPLE GARDEN OF SAMBO-IN AT DAIGO, NEAR KIOTO



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PLATE 5. — THE NICHOLS GARDEN, SALEM



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PLATE 6. — NATURALISTIC LAWN, ESTATE NEAR BOSTON



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PLATE 7. — SEQUOIA GROVE



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PLATE 8. — A SIERRA MOUNTAIN MEADOW



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PLATE 9. — AN UPLAND PASTURE



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PLATE 10. — THE PARK, THORESBY HOUSE, WILTS



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PLATE II. — DESOLATION

A STUDY IN LANDSCAPE EFFECT



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PLATE 12. — A SMALL FALL ON THE MERCED RIVER, YOSEMITE



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PLATE 13. — VERNAL FALL, YOSEMITE



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PLATE 14. — NEVADA FALL, YOSEMITE



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PLATE 15. — THE MEADOW ROAD, ARNOLD ARBORETUM



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PLATE 16. — AFTER A FROST STORM, MT. OSCEOLA, N. H.



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PLATE 17. — SNOW

A STUDY IN COMPOSITION IN LINE



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A STUDY IN TEXTURE



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PLATE 19 — LIGHT AND SHADOW, VILLA LANTE



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PLATE 20. — MONHEGAN SPRUCES

A STUDY IN ATMOSPHERE



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PLATE 21. — LONG VIEW OVER MEADOW IN THE PARK, MUSKAU



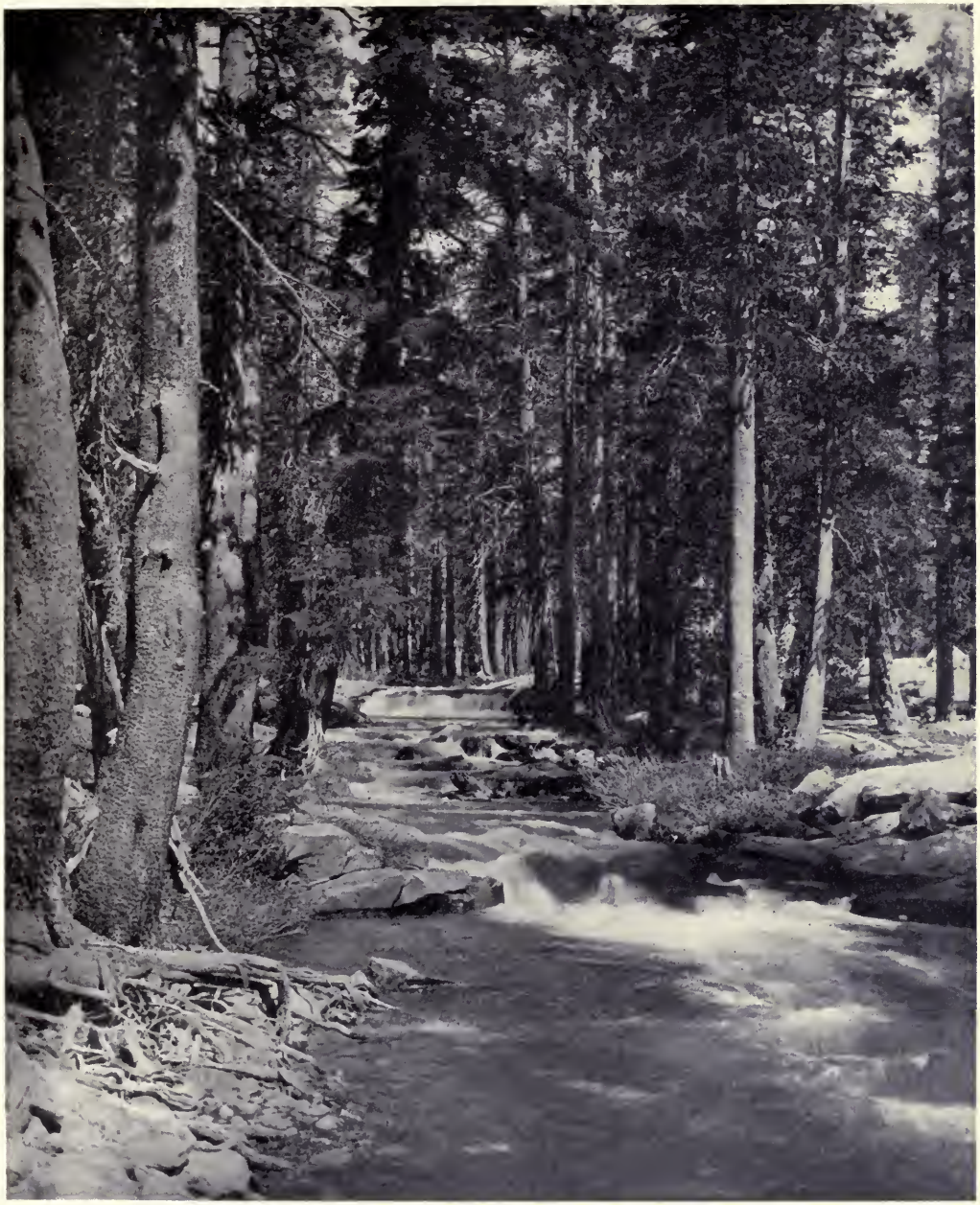
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PLATE 22. — NEW HAMPSHIRE INTERVALE



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PLATE 23. — VIEW FROM TEHIPITE DOME, CALIFORNIA



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PLATE 24. — A BROOK IN THE SIERRAS, CALIFORNIA



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PLATE 25. — THE "OXBOW," BEARCAMP RIVER, N. H.



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PLATE 26. — WATERSIDE PLANTING, SION HOUSE, BRENTFORD



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PLATE 27. — THE SPRING IN THE WILD GARDEN, ESTATE AT NEWPORT, R. I.



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PLATE 28. — BRIDGE, STOURTON, WILTS



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PLATE 29. — THE LOWER GARDEN, VILLA LANTE



Courtesy of Charles A. Platt

PLATE 30. — THE GARDEN OF "WELD," BROOKLINE, MASS.



Courtesy of the Boston Park Department

PLATE 31. — THE CIRCUIT DRIVE
FRANKLIN PARK, BOSTON



Courtesy of the Boston Park Department

PLATE 32. — SCARBOROUGH POND BRIDGE
FRANKLIN PARK, BOSTON



Courtesy of the Boston Park Department

PLATE 33. — THE TENNIS COURTS, ELLICOTTDALE
FRANKLIN PARK, BOSTON



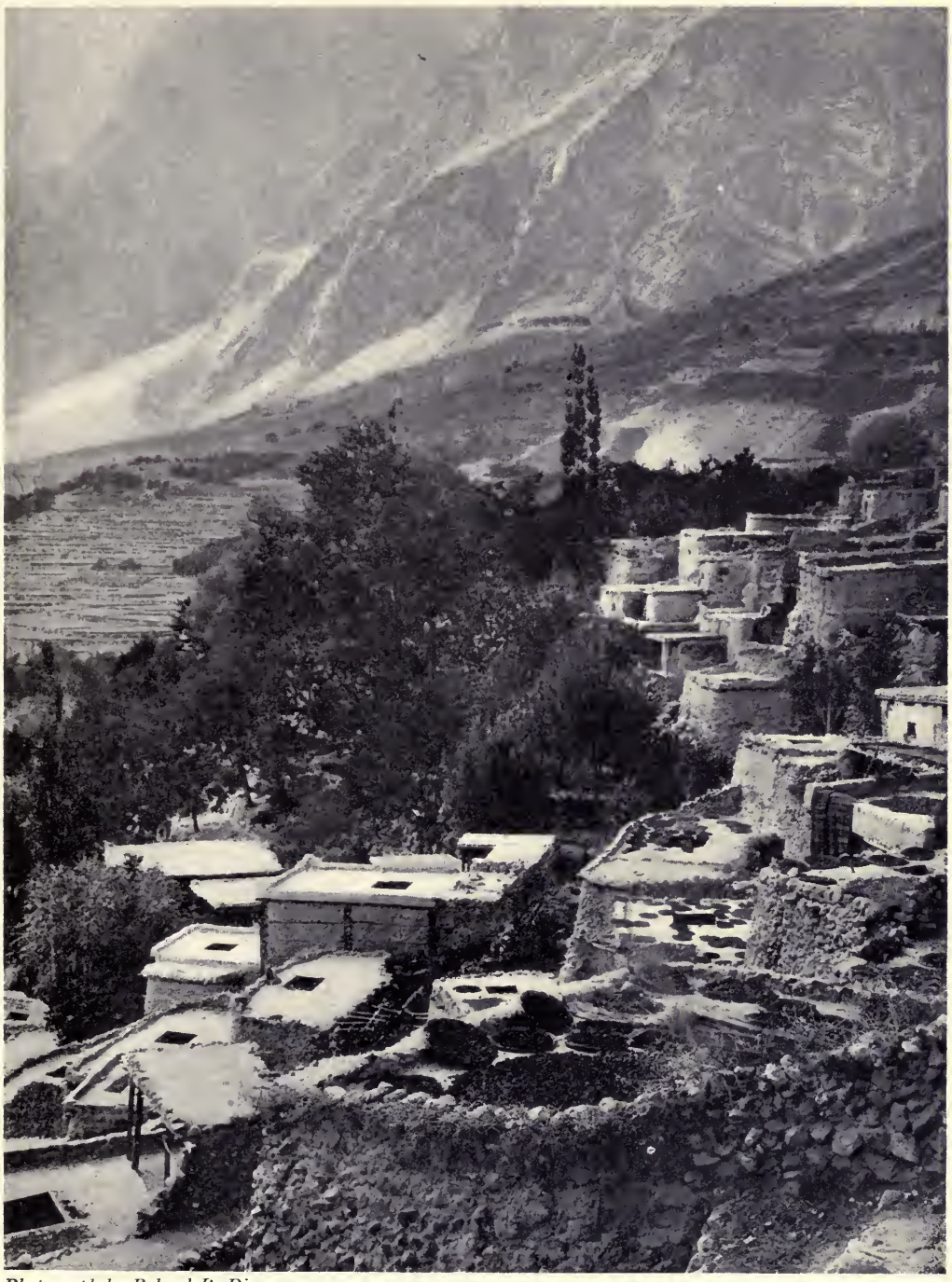
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PLATE 34.—STEPS IN NATURALISTIC SETTING
FRANKLIN PARK, BOSTON



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PLATE 35. — OVERLOOK SHELTER
FRANKLIN PARK, BOSTON



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PLATE 36. — THE TOWN OF BALTIT, HUNZA

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